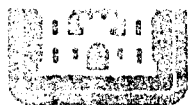


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US Army Corps
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New Orleans District

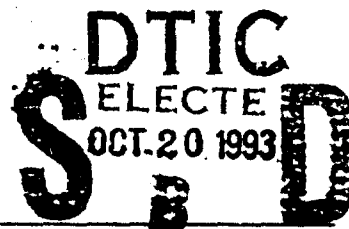
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MISSISSIPPI RIVER GULF OUTLET DREDGED
MATERIAL DISPOSAL AREAS, ST. BERNARD
PARISH, LOUISIANA

Final Report

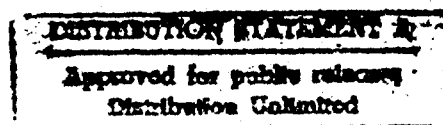
May 1993

EARTH SEARCH, INC.
P.O. Box 850319
New Orleans, LA 70185-0319



Prepared for

U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267



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DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

January 27, 1993

Planning Division
Environmental Analysis Branch

To The Reader:

This cultural resources effort was funded and guided by this office as part of our cultural resources management program. Documented in this report is a cultural resources survey of newly designated disposal areas along the north bank of the Mississippi River - Gulf Outlet. The survey included archeological test excavations at potentially significant sites located within the project's impact areas.

We and the Louisiana State Historic Preservation Officer (SHPO) concur with the contractor's conclusion that the Shell Beach Bayou Archeological Complex (sites 16SB39, 16SB40, and 16SB140) is eligible for inclusion in the National Register of Historic Places under criterion d. The information potential of these sites has been amply demonstrated.

As documented in the report, a site avoidance plan was developed jointly by the contractor and Corps personnel. This plan served as the basis of a determination of no adverse effect which was reviewed and accepted by the SHPO and the Advisory Council on Historic Preservation. The pre-construction topographic and soils surveys have already been completed and other aspects of the plan will be accomplished as the project is implemented.

Michael E. Stout
Authorized Representative
of the Contracting Officer

R. H. Schroeder, Jr.
Chief, Planning Division

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CHAPTER 1 INTRODUCTION

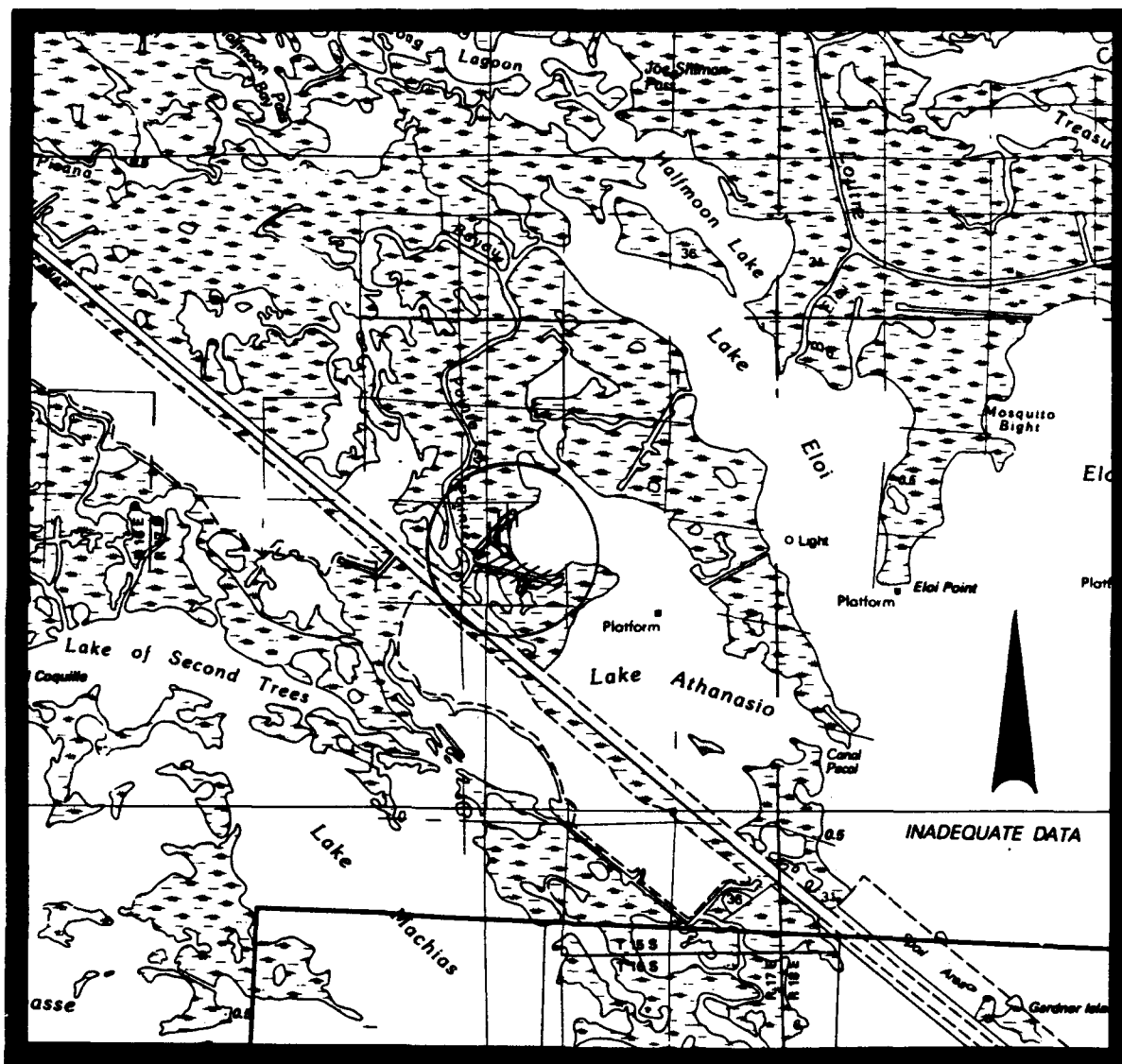
Under Contract to the New Orleans District Corps of Engineers, Earth Search, Inc. performed a cultural resources survey of portions of St. Bernard Parish referred to as "the Mississippi River Gulf Outlet Dredged Material Disposal Areas." Figures 1 and 2 show the study area, and the methods that were used within those areas to locate archeological sites.

In 1979, a cultural resources survey was conducted of the entire Mississippi River Gulf Outlet (MRGO) (Wiseman et al. 1979). That earlier survey included existing disposal areas on the west bank of the MRGO. However, new disposal areas have been proposed as part of an effort to deposit dredged material in areas where erosion is rapid, thereby benefiting coastal marshes. The cultural resources survey reported in this volume was conducted within two of those areas.

Phase 1 of the present survey consisted of an examination of the banks of the two Lake Athanasio disposal canals (Figure 1). Site files housed at the Louisiana Division of Archeology showed that no archeological sites had been reported there previously, and no archeological sites were recorded in the course of that examination.

Phase 2 of this survey consisted of an examination of selected areas shown in Figure 2. The Division of Archeology site files indicated that three prehistoric sites (16SB39, 16SB40, and 16SB71) had been previously reported within the Phase 2 area. One of these (16SB71) was reported as having an historic component. Two additional historic sites (16SB84 and 16SB85) had been previously reported near but not within the Phase 2 disposal area.

A variety of methods were used during survey and site definition. These methods included bankline inspection, systematic excavation of auger tests, pedestrian survey with shovel tests, and excavation of 1 x 1 m units. Recommended National Register status of all of the sites in the study area is summarized in Table 1. The table also lists occurrences of cultural material that were observed within the study area but not considered to be archeological sites.



/// bankline reconnaissance



Figure 1. Excerpt from the Black Bay (1983) 30 x 60 Minute Quadrangle (Bathymetric), showing the Phase 1 study area. Scale 1:100,000.

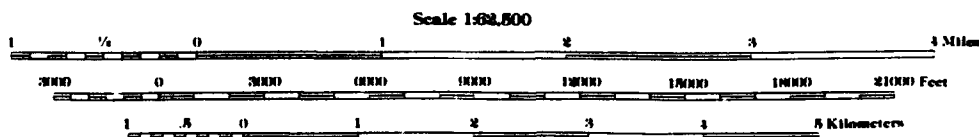
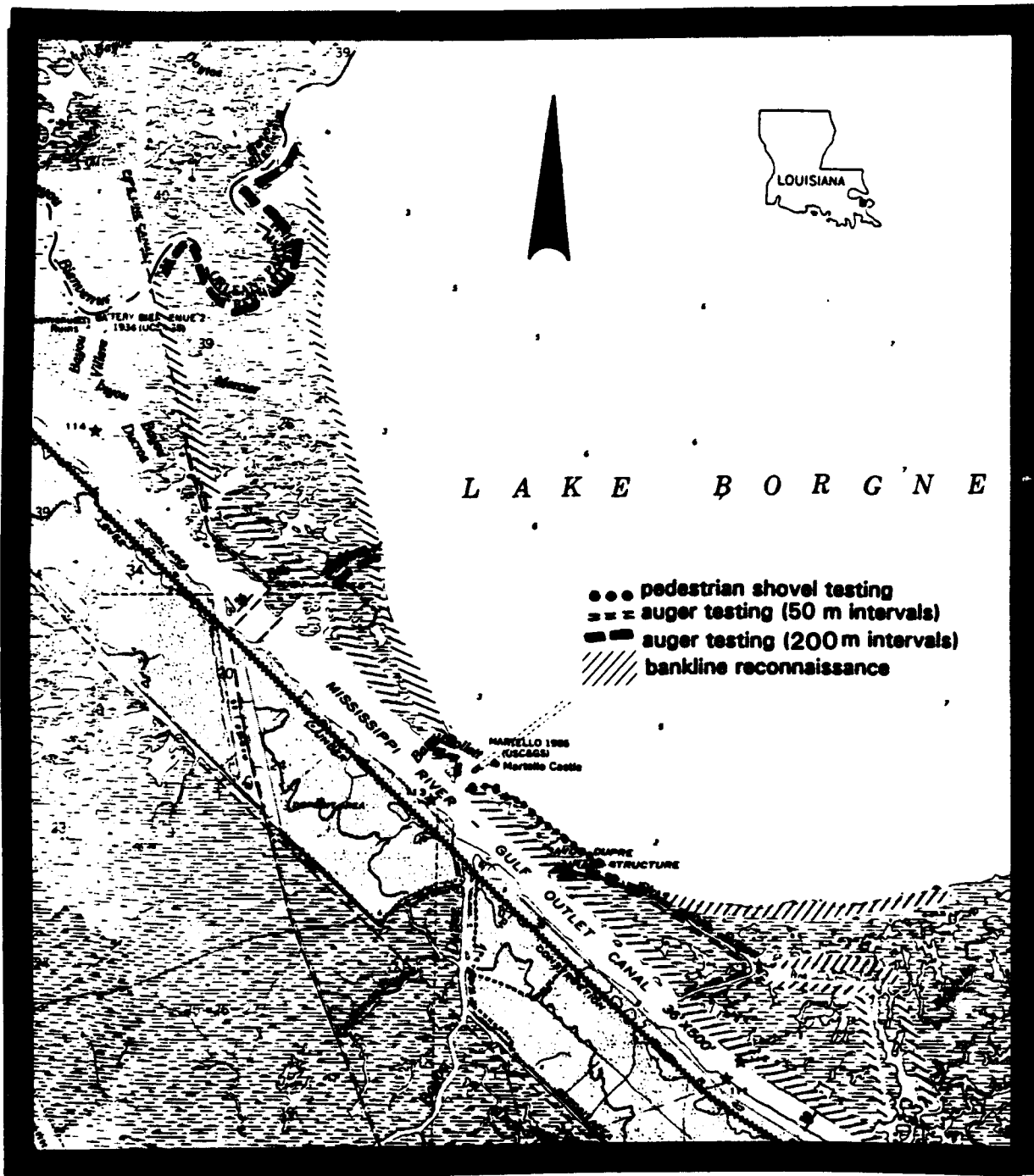


Figure 2. Excerpt from the St. Bernard (1989) and Chef Menteur (1983) USGS 15' quadrangles showing the Phase 2 study area.

Table 1. NRHP summary of sites.

Archeological Sites	NRHP Assessment
16SB39	Eligible
16SB40	Eligible
16SB71	Not eligible
16SB140	Eligible
16SB148	Not Eligible

Non-Site Locales	NRHP Assessment
6/9/92 No. 1	Not eligible
6/10/92 No. 1	Not eligible
6/10/92 No. 1	Not eligible
6/19/92 No. 2	Not eligible
7/16/92 No. 1	Not eligible

CHAPTER 2 GEOMORPHOLOGY OF THE STUDY AREA

Louisiana's deltaic plain, which includes all of St. Bernard Parish, was created by progradation of a series of Mississippi River courses and deltas. The Mississippi River has repeatedly built major delta lobes, and these were subsequently abandoned. After abandonment, marine transgression occurred due to compaction and subsidence. In recent times, human activity has accelerated the rate of land loss. Prior to that activity, there was an overall gain in the size of the coastal plain in southeast Louisiana (Britsch and Dunbar 1990:25-26).

The first stage of delta formation is progradation. During this stage, a stream deposits sediment into a standing body of water. Distribution of flow results in a natural sorting of sediment according to particle size. Because of the deposition of sand at the shallow, wide mouth of the prograding stream, middle-ground bars form. These result in the bifurcation of channels and the initial formation of a distributary network. Eventually, one channel is usually favored (Frazier 1967:288).

Natural levees form along the channels as the result of deposition of sediment suspended in floodwaters. Progradation continues until eventually a channel is "overextended" and diversion into an alternate course with a steeper, hence more favorable, gradient occurs. The delta lobe associated with the formerly favored course now begins to subside as underlying clays are compacted and the amount of surface deposition is reduced. Delta margins begin to be reworked by wave action, and sand that had been deposited at the mouth of the formerly favored stream accumulates as barrier islands. Eventually, the abandoned distributary may be re-activated, and the result is a repetition of the sequence (Frazier 1967:288,291).

During the past 7,000 years, a series of delta complexes formed. These complexes, beginning with the oldest, were the Maringouin, Teche, St. Bernard, Lafourche, and the Plaquemine-Modern. The locations of the complexes are shown in Figure 3 (Frazier 1967:289) and the location of the lobes of which each complex is comprised in Figure 4 (Frazier 1967:307). The estimated ages of these complexes and lobes are shown in Figure 5 (Frazier 1967:308).



Figure 3. Outlines of the Mississippi River delta complexes (from Frazier 1967: Figure 1).

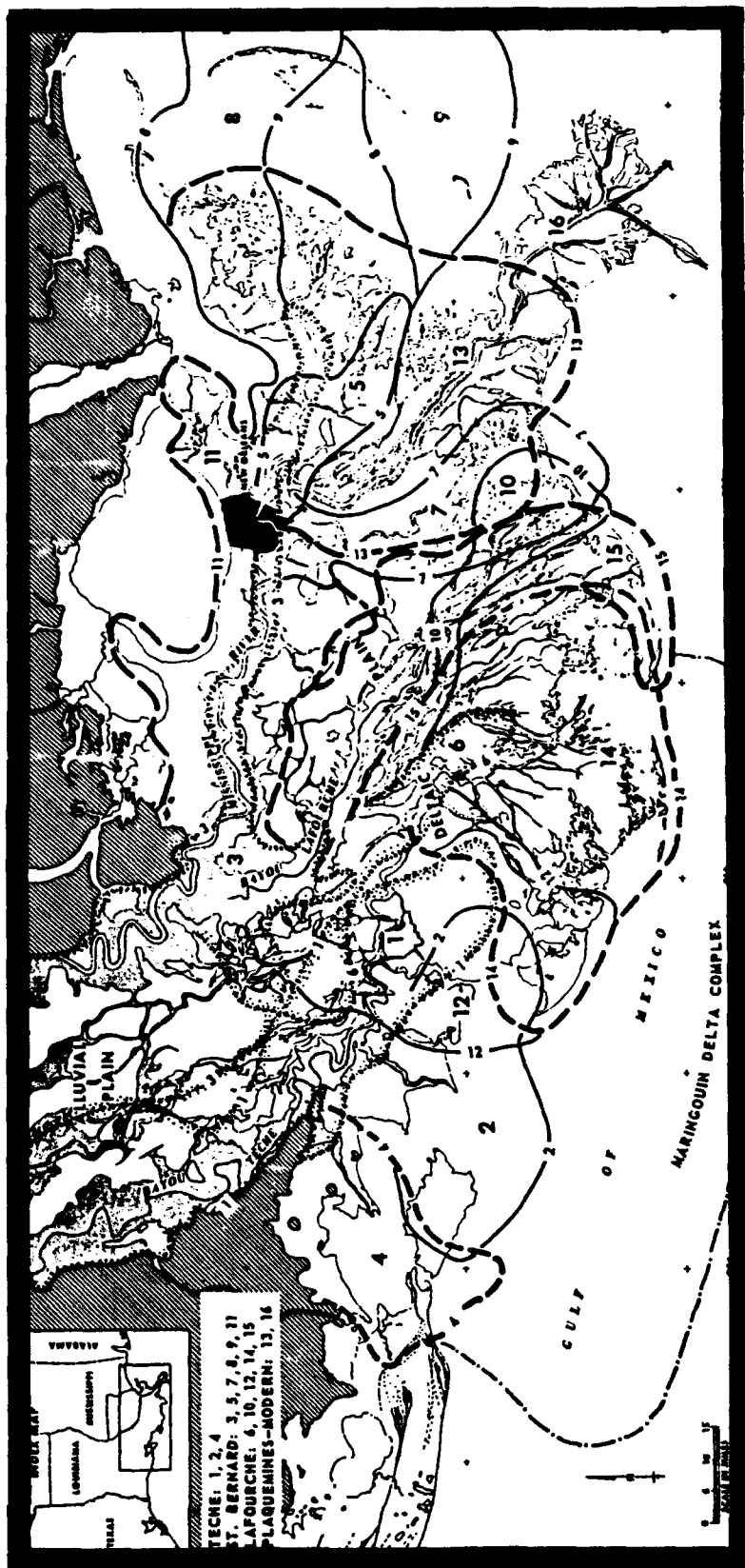


Figure 4. Delta lobes formed by the Mississippi River in the past 6,000 years (from Frazier 1967: Figure 11).

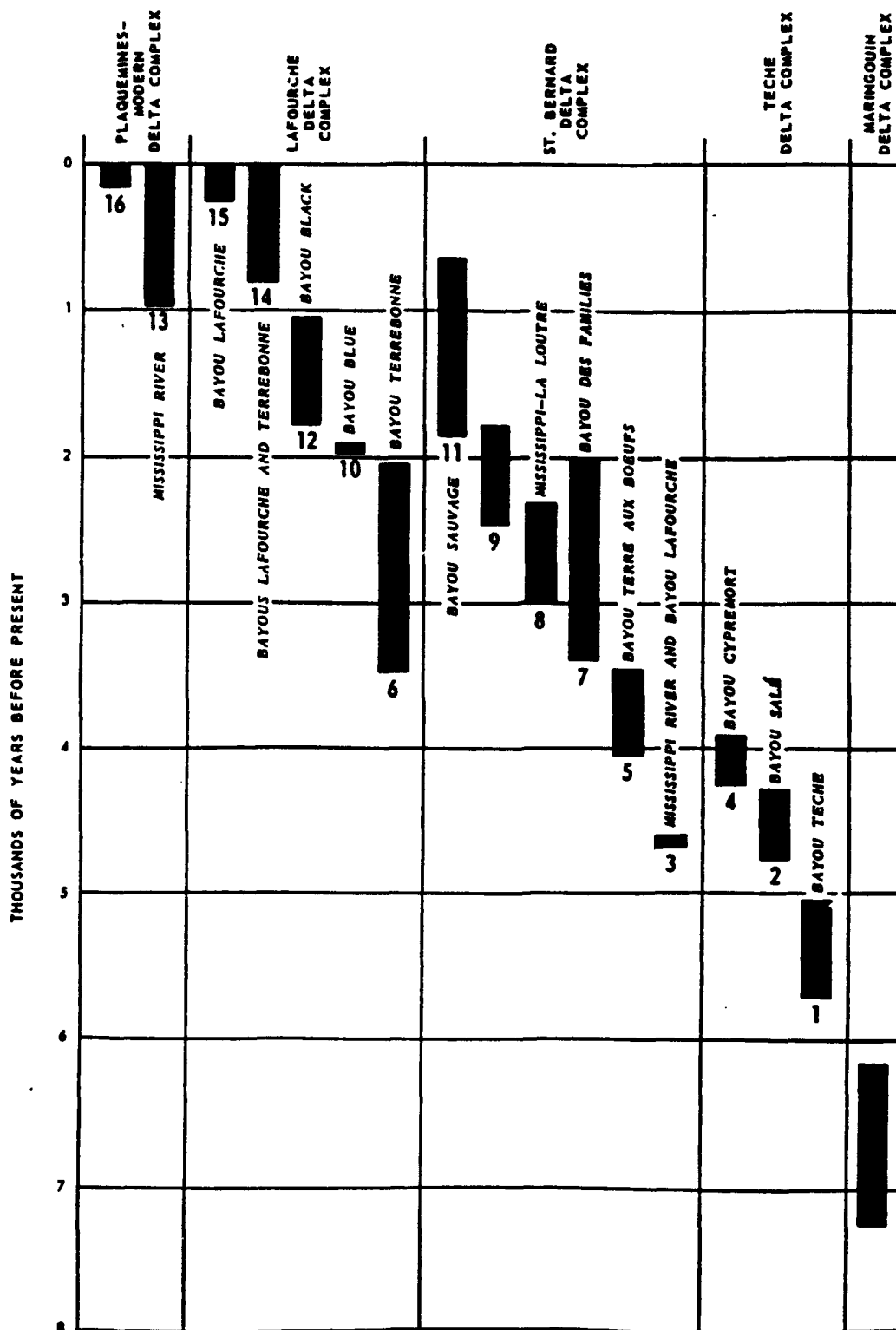


Figure 5. Estimated ages of Mississippi River delta complexes and lobes (from Frazier 1967: Figure 12)

Figure 6 shows the location of a line of borings (E-E') from which Frazier (1967) obtained data concerning the formation of the St. Bernard Delta Complex. The line runs southeast from New Orleans, close to the shore of Lake Borgne, crossing a series of distributaries associated with Bayou La Loutre. After crossing Bayou La Loutre, the line of borings continues into the Chandeleur Sound. The line is closest to the present study area in the vicinity of Mile 15.

Figure 7 (Frazier 1967:304) shows the delta lobe and facies relationships revealed for the study area by the line of borings. It shows that the line of cores crosses Shell Beach Bayou twice. This is because the line cuts through the meander bend on which 16SB39 is located.

The earliest stage of natural levee formation in the vicinity of Shell Beach Bayou occurred during the period of activity of Delta Lobe 3 (the Mississippi River and Bayou Lafourche Lobe) approximately 4700 years ago. Sediments associated with this episode are now deeply buried. The nature of these sediments indicate that a distributary mouth-bar was present at the location where Frazier's (1967) line of borings crosses Shell Beach Bayou (Frazier 1967:306).

Aggradation of the natural levee of Shell Beach Bayou occurred again while Delta Lobe 8 (the Mississippi-La Loutre Lobe) was active, approximately 3000 to 2300 B.P. Deposition continued here during the active period of the unnamed Delta Lobe 9, which ended about 1800 B.P. Following that period of activity, only minor amounts of sediment were deposited in the vicinity of Shell Beach Bayou and the present study area. However, peat accumulated as marsh vegetation flourished (Frazier 1967:306).

Table 2 summarizes C-14 dates used by Frazier (1967:314) to construct the chronology summarized in the preceding paragraph. Based on those data, the periods of greatest activity of Shell Beach Bayou were approximately 4750-4600 B.P. (Lobe 3), 3000-2300 B.P. (Lobe 8), and 2450-1800 B.P. (Lobe 9). Frazier's (1967) data from cores (Figure 7) indicates that in the vicinity of the study area, sediments associated with Lobe 3 are at depths of at least 25 feet below sea level. As noted above, the study area was situated near the mouth of a prograding stream while Lobe 3 was active.

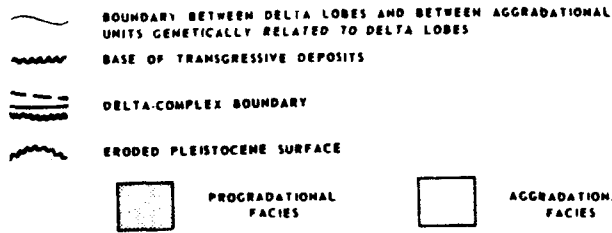


Figure 6. Location of cross sections and principal control borings; used by Frazier to reconstruct the Mississippi River delta formation (from Frazier 1967: Figure 5).

Table 2. Summary of C-14 Dates Associated with Delta Lobes 3, 8, 9 (Frazier 1967:313-314).

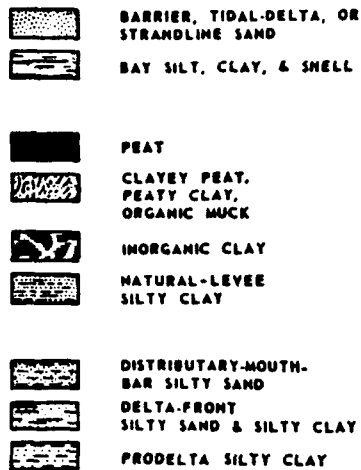
Lobe	Earliest C-14 Date and Depth Below Sea Level	Latest C-14 Date and Depth Below Sea Level
Lobe 3	4750+130, 20-22 ft	4600+125, 10-11.5 ft
Lobe 8	3000+120, 10-10.8 ft	2320+110, 6-7 ft
Lobe 9	2450+133, 7.5-8.5 ft	1795+106, 5.5-11 ft

UPPER SECTION



13 DELTA-LOBE DESIGNATION
(SEE TEXT, ALSO FIGURES 11 AND 12)

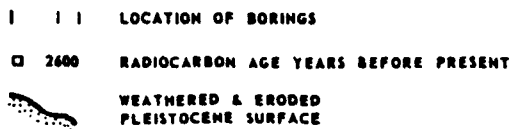
LOWER SECTION



TRANSGRESSIVE FACIES

CHANNEL FILL
POINT BAR
AGGRADATIONAL FACIES

PROGRADATIONAL FACIES



VERTICAL EXAGGERATION: x800

Key to Figure 7.

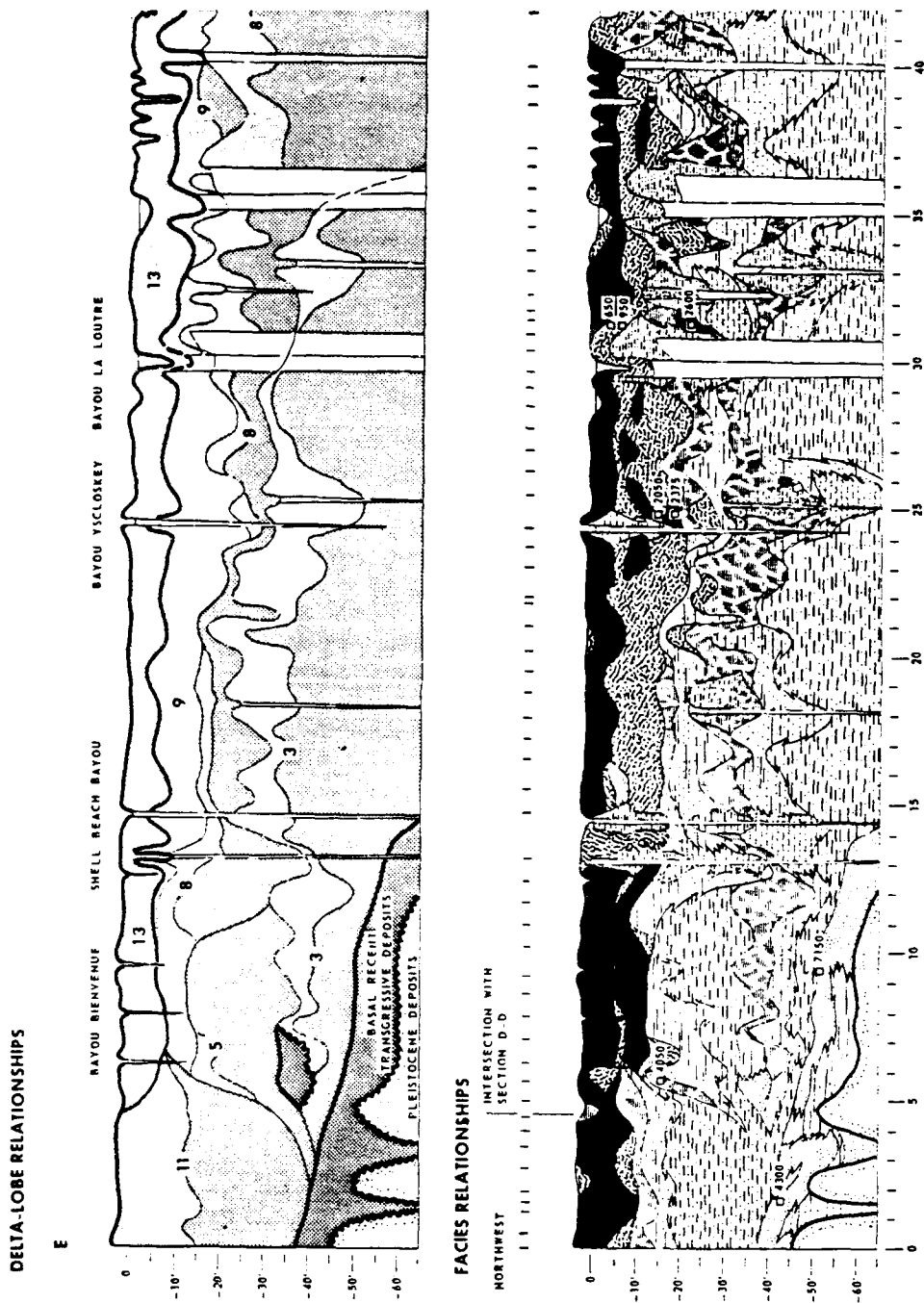


Figure 7. Delta lobe and facies relationships in a portion of the St. Bernard delta complex (from Frazier 1967: Figure 10).

Sediment associated with Lobe 8 lies at depths of approximately 10 to 20 ft. For Lobe 9, depths are approximately 5 to 15 feet. An examination of Figure 7 shows that approximately 20 feet of sediment accumulated on the natural levee associated with Shell Beach Bayou while Lobes 8 and 9 were active. The period of activity of greatest duration, coincident with the activity of Lobes 8 and 9, was from approximately 3000 to 1800 B.P. The highest portion of the natural levee formed in that period is at or within five feet of the present-day surface, buried in some places only by accumulations of peat. It was during this period of activity that the St. Bernard delta was extended eastward (Frazier 1967:306), beyond the present-day Chandeleur Islands (Figures 4 and 8).

Saucier (1963) suggested that Native Americans in southeastern Louisiana occupied natural levees associated with channels that had already achieved maximum development and were partly abandoned. He hypothesized that the lower reaches of partially abandoned streams were desirable site locations because flood frequency was lower, fresh water was available, and the location allowed convenient access to swamps, marshes, and fresh to brackish water lakes. If this suggestion is correct, then most of the occupation associated with Shell Beach Bayou would likely have occurred after 1800 B.P. In terms of the regional culture history (Chapter 4), this date would fall within Phillip's (1970) Marksville Period.

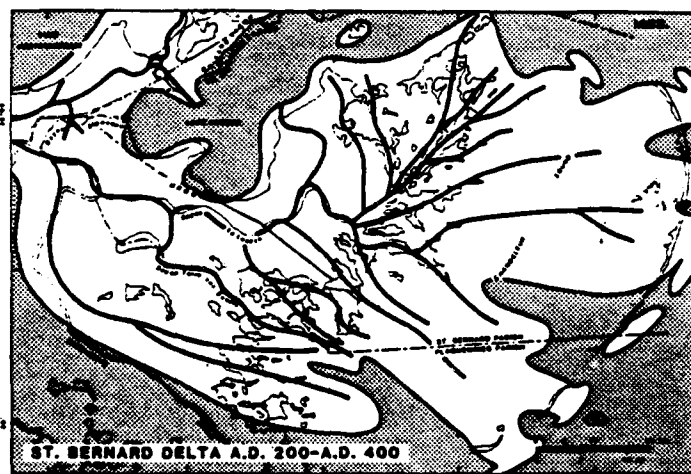
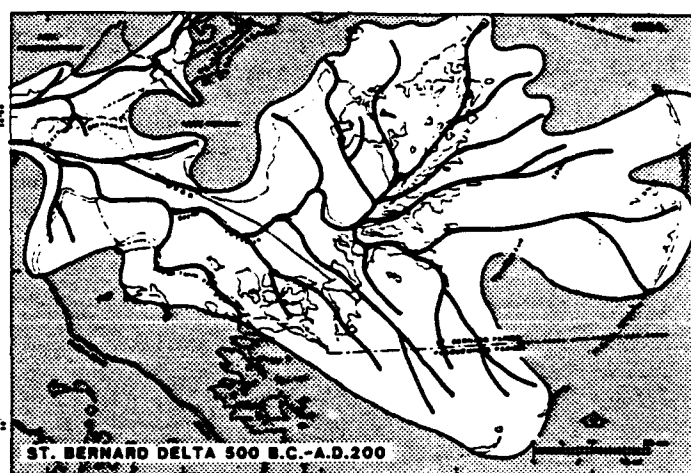
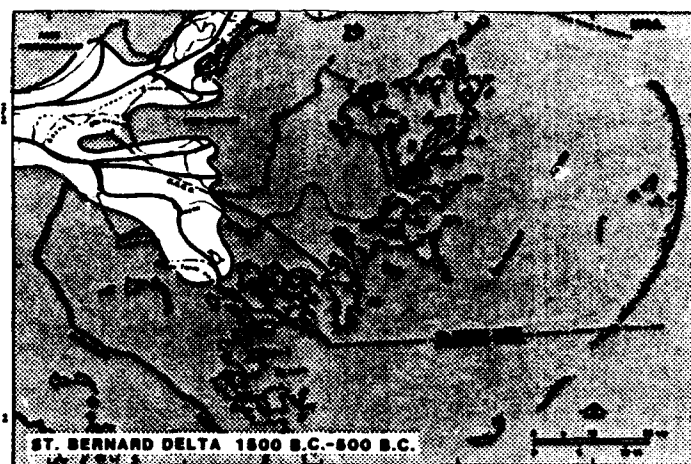


Figure 8. Reconstruction of the formation of the St. Bernard delta complex (from Wicker et al. 1982: Figure 2/1).

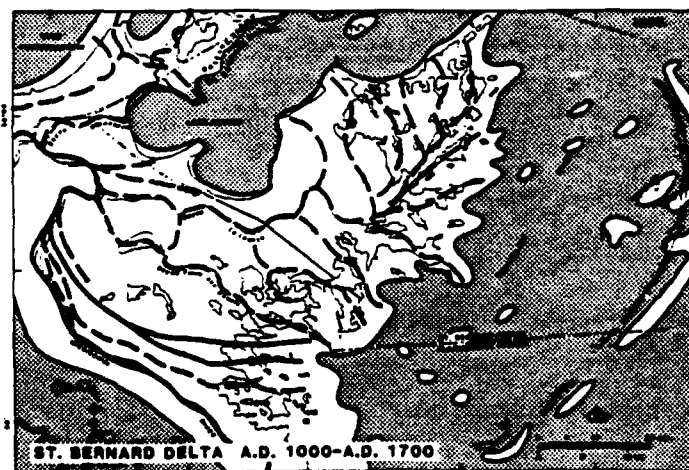
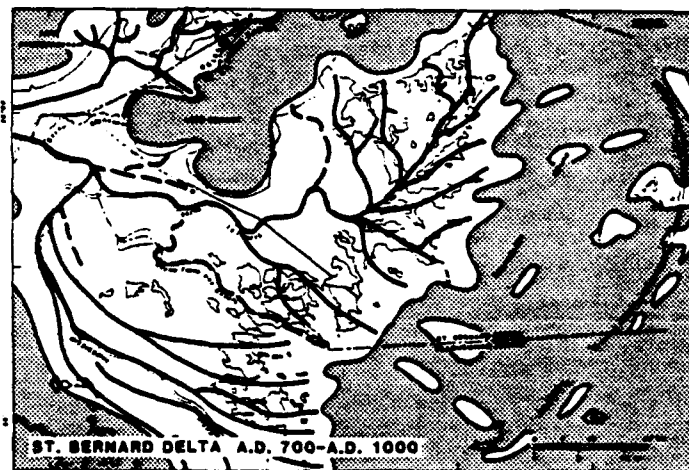
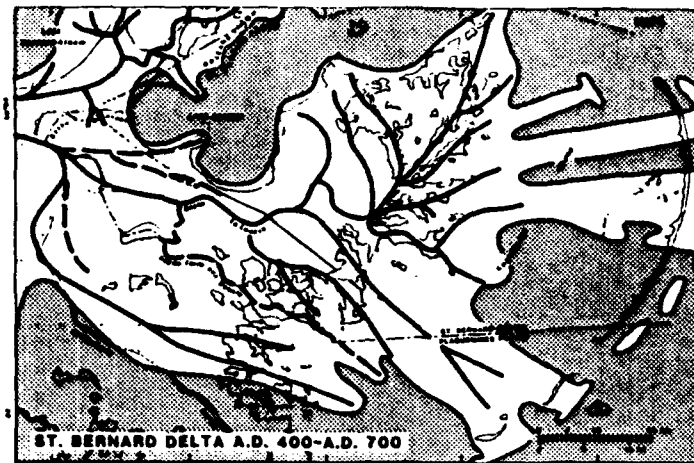


Figure 8 (Continued). Reconstruction of the formation of the St. Bernard delta complex (from Wicker et al. 1982: Figure 2/1).

CHAPTER 3

NATURAL SETTING OF ST. BERNARD PARISH

Overview and Present Condition

The total area of St. Bernard Parish encompasses approximately 1.3 million acres. However, approximately 75 percent of that acreage is occupied by streams, lakes, and bays of the Gulf of Mexico. Much of the remainder of the parish is occupied by swamps and marshes. As a result, most of the parish's population is concentrated along natural levees associated with the Mississippi River, Bayou LaLoutre, and Bayou Terre aux Boeufs because these landforms are slightly higher than the surrounding wetlands. Natural levees of the Mississippi River and its distributaries represent approximately ten percent of the parish's land area. Most of this acreage is now developed for urban use. Even some of the marshes and swamps have been drained for urban development because of the shortage of suitable land (Trahan et al. 1989:1). In the eighteenth and nineteenth centuries, however, large portions of the natural levees, especially those along the Mississippi River, were used for plantation agriculture.

Topographic relief in St. Bernard Parish is minimal. The highest elevations are approximately twelve feet above sea level. These occur on natural levees associated with the Mississippi River. The lowest elevations are about three feet below sea level, and these generally occur within former marshes and swamps that have been drained. Most of the undrained swamps and marshes are elevated about one foot above sea level. Because the parish is so low, and because of the extensive shoreline associated with lakes, bays, and the Gulf of Mexico, man-made levees are necessary to protect developed areas from flooding (Trahan et al. 1989:1).

Hydrology

Prior to the construction of artificial levees, water from the Mississippi River flowed into the wetlands through distributary channels. These channels also carried rainwater. Because slopes are so gentle, this water as well as sheet flow that resulted from flood conditions moved gradually into and through the swamps and marshes. Movement of water was further slowed because many of the interdistributary channels were shallow and winding, and because of the effects of wetland vegetation. Fresh water was thus released gradually into the tide waters. As a result, the

hydrologic environment, specifically water levels and salinity values, in the shorter term were relatively stable (Trahan et al. 1989:3). More long term changes in water levels, salinity values, and the location of land masses occurred as the result of changes in the pattern of flow of the Mississippi River (Chapter 2).

Modern development within the parish has dramatically altered the hydrologic environment. The rate of land loss due to erosion and subsidence has been accelerated. In addition, construction of large numbers of canals, and in particular the Mississippi River Gulf Outlet, has resulted in saltwater intrusion. Freshwater swamps and marshes have virtually disappeared. Between 1955 and 1978, 99.9 percent of the 20,206 acres of freshwater marsh were lost in St. Bernard Parish (Coastal Environments, Inc. 1982:2/1-2/3).

Climate

St. Bernard Parish is located within the subtropics. Its weather is strongly influenced by the Gulf of Mexico. Winters are relatively mild. The average winter temperature is 54° F, while the average daily minimum temperature in the winter is 44° F. Summers, however, are hot with an average temperature of 81° F and an average daily maximum temperature of 90° F (Trahan et al. 1989:1-2).

The average annual rainfall is 59 inches. Fifty-six percent of the total falls in April through September, a period that coincides with the growing season for most crops suitable for the parish. Rainfall amounts can be considerably increased when hurricanes occur (Trahan et al. 1989:2).

Plant Communities

Prior to cultivation, urbanization, and modification of its hydrology, diverse plant communities were present in St. Bernard Parish. Although the difference between elevations of the various landforms is minimal, these slight differences were associated with the development of distinctively different plant communities. One of these, and perhaps that of the most limited extent, was an "upland forest" found only on the highest natural levees. On natural levees with lower elevations, a "hardwood bottoms" community was present. Also following the course of the natural levees but occurring at lower elevations were the "cypress-tupelo" forests. An intermediate swamp was sometimes located

between these two communities. Large tracts of marsh occur in the surrounding areas (White et al. 1983:102).

Prior to cultivation and urbanization, upland forests occupied most of the natural levee associated with the river itself. Similar plant communities remain present on the Pleistocene terrace north of Lake Pontchartrain. Natural climax vegetation in such forests is dominated by mixed deciduous and evergreen trees that are less tolerant of flooding than are bottomland hardwood species. Woody species in an elevated natural levee forest included oaks (*Quercus virginiana*, *Q. alba*, *Q. nigra*), shagbark hickory (*Carya ovata*), hackberry (*Celtis laevigata*), sweetgum (*Liquidambar styraciflua*), pecan (*Carya illinoensis*), magnolia (*Magnolia spp.*), and various pines (Bahr et al. 1983:82).

Hardwood bottom forests were dominated by the water oak (*Quercus nigra*). Subdominants included the sweetgum (*Liquidambar styraciflua*), hackberry (*Celtis laevigata*), and live oak (*Quercus virginiana*). Other forest species include the box-elder (*Acer negundo*), honey-locust (*Gleditsia triacanthos*), American elm (*Ulmus americana*) and the Nuttall oak (*Quercus nuttallii*). The most common shrub species were palmetto (*Sabal minor*) and green haw (*Crataegus viridis*), but thickets of possum-haw (*Ilex decidua*) also occur. Within forest gaps, elderberry (*Sambucus canadensis*) and French-mulberry (*Callicarpa americana*) occurred (White et al. 1983:103-104).

Vines were found throughout the bottomland forest. The most common of these included poison-ivy (*Rhus toxicodendron* var. *vulgaris*), Virginia creeper (*Parthenocissus quinquefolia*), supple-jack (*Berchemia scandens*), pepper-vine (*Vitis rotundifolia*), muscadine (*Vitis rotundifolia*) and hemp-weed (*Mikania scandens*) (White et al. 1983:104).

The cypress-tupelo swamps, located a greater distance from distributaries, were dominated by bald cypress (*Taxodium distichum*). Water tupelo (*Nyssa aquatica*) was often either a sub- or co-dominant species. Red maple (*Acer rubrum* var. *drummondii*) and ash trees (*Nyssa aquatica*) represented the other subdominants in this community. Shrubs included wax-myrtle (*Myrica cerifera*) and button-bush (*Cephalanthus occidentalis*). Herbaceous ground cover, absent in the bottomland community, included smart-weed (*Persicaria punctata*), alligator-weed (*Alternanthera philoxeroides*),

swamp potato (*Sagittaria lancifolia*), and water hyacinth (*Eichhornia crassipes*) (White et al. 1983:105).

An intermediate swamp forest sometimes occurred between the hardwood bottom forest and the swamp forest. Swamp red maple, American elms, and water oaks were common here. Palmettos created a dense understory, which is nearly impenetrable in some locations (White et al. 1983:105).

The other important plant community occurred in the marsh areas. Marshes are categorized according to their degree of salinity, and because of variation in fresh water influx compared to salt water intrusion, the areas covered by the various marsh communities certainly changed through the period of prehistoric occupation. The changes were associated with cycles of progradation and deterioration of natural levees (Chapter 2).

The ecological distinction between a swamp and a marsh is the absence of trees in the latter. Marsh soils are peat and muck, and elevation of these is approximately one foot above mean sea level in the vicinity of the study area. Cord grass (*Spartina patens*) is dominant in the brackish or intermediate marsh, while swamp-potato (*Sagittaria lancifolia*) predominates in freshwater marsh. Numerous other species co-occur with these (White et al. 1983:106-107).

Faunal Resources

Important fur-bearing species present within or near the study area were the muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), mink (*Mustella vison*), and otter (*Lutra canadensis*). Nutria (*Myocastor coypus*) are a recent introduction and were not present during the prehistoric or historic periods.

Other indigenous mammals known to occur in the area included the Virginia opossum (*Didelphis virginiana*), the swamp rabbit (*Sylvilagus aquaticus*), the fox squirrel (*Sciurus niger*), the fox (*Vulpes fulva*), the bobcat (*Lynx rufus*), the beaver (*Castor canadensis*), the civet cat or spotted skunk (*Spilogale putoris*), and the white-tailed deer (*Odocoileus virginianus*) (Bahr and Hebrard 1983:118-126). The mammalian faunal inventory was even more extensive during the prehistoric period (Speaker et al. 1986:26-29).

The area also hosted a diverse assemblage of species of fish. They are highly mobile, and seasonal

movements of fish populations are widespread. The result is that marine fish would have penetrated inland to freshwater habitats, while freshwater species would sometimes have occurred in more saline environments. Also, the lower reaches of freshwater streams probably served as nursery areas for the young of some marine species (Bahr and Hebrard 1976:69).

At least 26 reptilian species were native to the area. The American alligator (*Alligator mississippiensis*) and various species of turtle were common, and undoubtedly represented the most economically important reptiles for prehistoric peoples (Bahr and Hebrard 1976:74-77).

Birds were also abundant. In the nearby Barataria Basin, at least 216 species are known to occur at present. Approximately 43% of these are passerines, including both permanent residents and those only present seasonally. The remainder of the 216 species are predominantly waterfowl, many of which are migratory (Bahr and Hebrard 1976:6-7, 78-115).

Rangia cuneata

Virtually all of the recorded prehistoric sites located in St. Bernard Parish are associated with *Rangia cuneata* shells. The same association characterizes many prehistoric period sites throughout southern Louisiana. This brackish water mollusc represented an important resource for pre-European occupants of the region.

Byrd (1976) examined the nutritional and caloric value of the *Rangia* in order to determine its relative importance to prehistoric diet. She notes that a 100-pound deer might be expected to contribute 50 pounds of edible meat. In order to provide the equivalent 50 pounds of *Rangia* meat, it would be necessary to harvest 25,300 clams. That would produce 50,600 clam shells which, based on clam size at the Morton shell midden, would represent a volume of 11.8 cubic feet. Thus, clams provide only relatively small amounts of meat per volume of discarded shell (Byrd 1976:25).

In addition to providing only a small amount of meat, *Rangia* have relatively low nutritional values compared to other food items utilized during the prehistoric period. This is dramatically illustrated by Table 3 which compares the protein, fat, carbohydrate,

and caloric content contained in 100 grams of various food items (Byrd 1976:27).

Table 3. Comparative Nutritional Value of 100 Grams of *Rangia* (from Byrd 1976:27)

	Protein	Fat	Carbo- hydrate	Calories
<i>Rangia</i> (raw, meat only)	12.6	1.6	2.0	76
Oyster (raw)	8.4	1.8	3.4	66
Deer (raw, lean meat)	21.0	4.0	0	126
Raccoon (roasted)	29.2	14.5	0	255
Duck (raw)	21.3	5.2	0	138
Catfish (raw)	17.6	3.1	0	103
Grape (raw)	1.3	1.0	15.7	69
Persimmon (raw)	0.8	0.4	33.5	127
Hickory (nut)	13.2	68.7	12.8	673
Pumpkin (raw)	1.0	0.1	6.5	26
Corn (modern, field, raw)	8.9	3.9	72.2	348

As the table demonstrates, other kinds of meat yield greater amounts of protein than does *Rangia*. Its fat content is lower than the other food items presented with the exception of grapes, persimmons, and pumpkin. Carbohydrate yield is somewhat higher than other meats, but it is low compared to plant foods. And finally, only oyster, grape, and pumpkin have a lower caloric value. The caloric equivalent of a 100-pound deer would be about 42,000 clams, representing 19.6 cubic feet of clam shells. The volume of *Rangia* shells in a prehistoric midden is, therefore, disproportionate when the contribution of this food is compared to that of other food types that leave fewer and more compact remains (Byrd 1976:27-28).

Despite the fact that *Rangia* are relatively low in food value, they were exploited throughout the prehistoric period in coastal Louisiana. This exploitation may be due to the fact that little risk or expenditure of energy is involved in obtaining *Rangia*. In some brackish waters, these clams are relatively abundant. They can be gathered by hand in shallow waters and by rake in deeper waters. So long as large, dense clam beds are available, little energy expenditure is necessary to obtain them (Byrd 1976:28).

In addition, there are other possible reasons for the apparently heavy exploitation of *Rangia* by prehistoric peoples. Contributions this clam might have made to trace element intake and other aspects of diet remain undetermined. Also, the large volume of clam shells that result from clam harvests represent an important source of "fill" in low-lying areas subject to flooding. All of southern Louisiana represents such an area. It is possible that Native Americans were deliberately using *Rangia* shells to provide greater topographic relief on portions of the natural levee and in the marsh.

CHAPTER 4 ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA

The Poverty Point Period

Few sites dated to the Paleo-Indian or Archaic Periods have been reported in southeastern Louisiana. Land formation within what would become St. Bernard Parish was not occurring until the Poverty Point Period (Chapter 2), so it is with this period that the present review begins.

The name "Poverty Point" is derived from the type site, an area of massive earthwork construction, in northeastern Louisiana. This site is believed to have been a cultural center with trade networks and influence extending throughout the Lower Mississippi Valley. Baked clay balls known as "Poverty Point objects" are one of the important traits that mark the period. Other traits include an elaborate lapidary and microlithic industry, use of steatite vessels, and the use of exotic stone (Thomas 1982:5).

Two Poverty Point sites and a possible third are located within the land area formed by the St. Bernard Delta Complex. One of these (the Linsley Site, 16OR40) is in Orleans Parish. Material dredged from this subsided *Rangia* midden was used to define the Bayou Jasmine-Garcia Phase of the Poverty Point Culture (Gagliano et al. 1975:44-47). A series of radiocarbon dates and baked clay balls are evidence that link the site with the Poverty Point Period (Weinstein 1978:A/23-A/25; Thomas 1982:3). The other Poverty Point site in the area is 16OR34 (the Garcia site). Recovery of microflints at 16SB44 suggests the possibility of an occupation dated to this period (Wiseman et al. 1979:6-9 and Figure 6-4). The locations of these three sites relative to the developing St. Bernard Delta complex are shown in Figure 9.

The Tchula Period

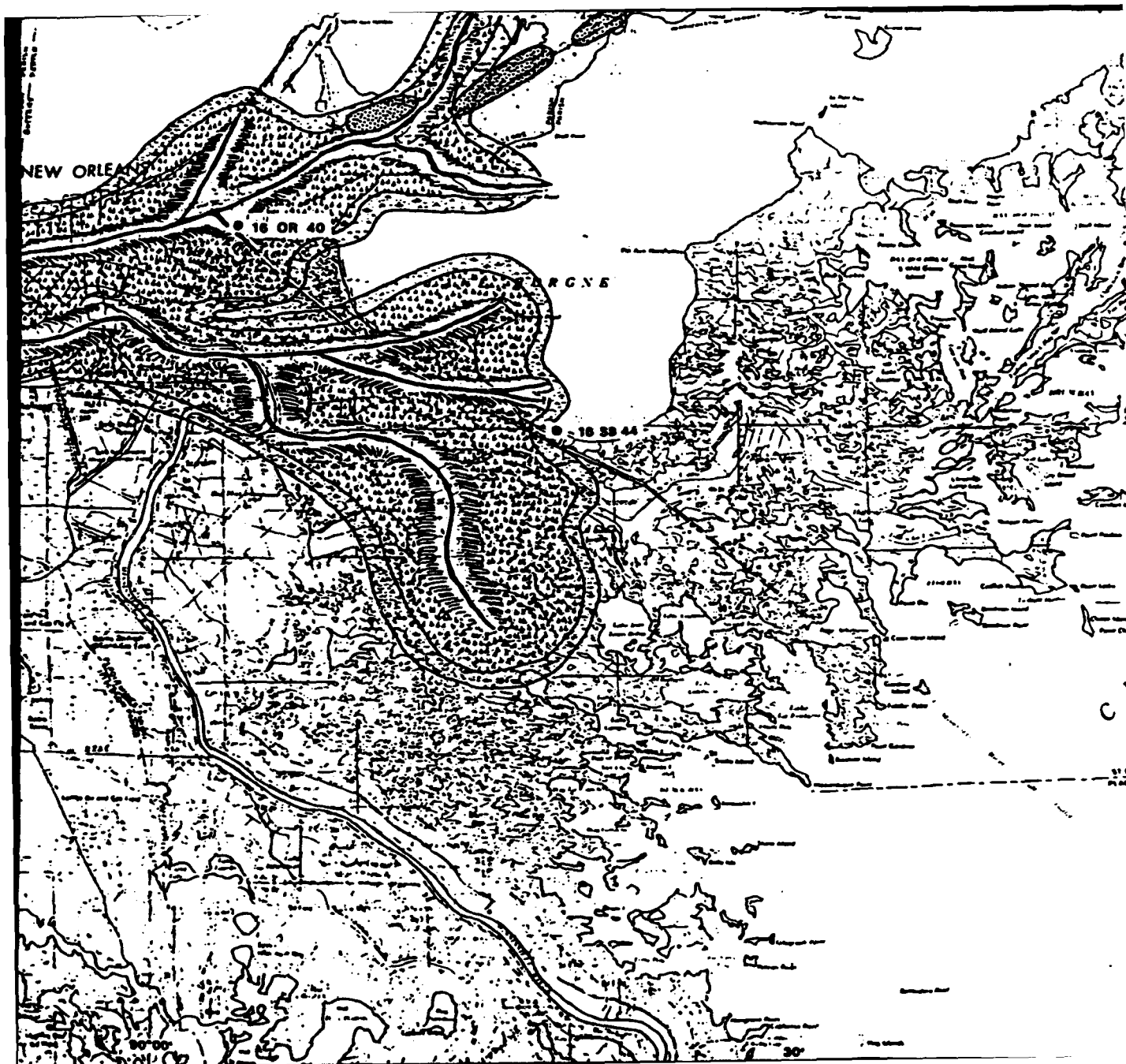
Tchula Period occupations in the Lower Mississippi Valley are associated with the Tchefuncte culture. The period has been called "the early ceramic period" because, with the exception of fiber-tempered pottery, it was the interval during which initial pottery complexes appeared in the Lower Mississippi Valley. Sites are few and scattered, and there are no universal markers. However, within subareas such as South

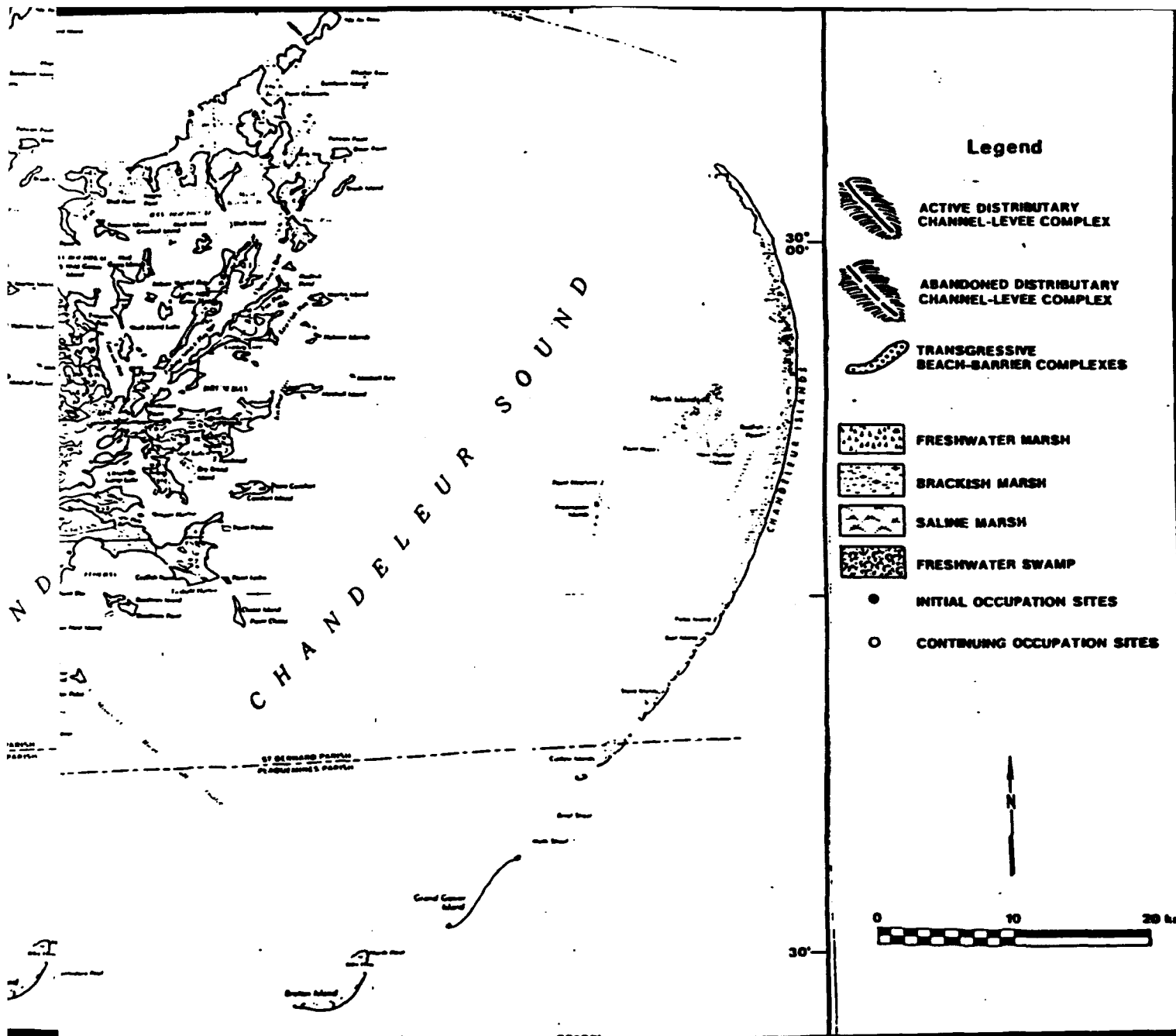
Louisiana, regional markers, primarily Tchefuncte type ceramics, have been identified (Phillips 1970:7,8,15, 76).

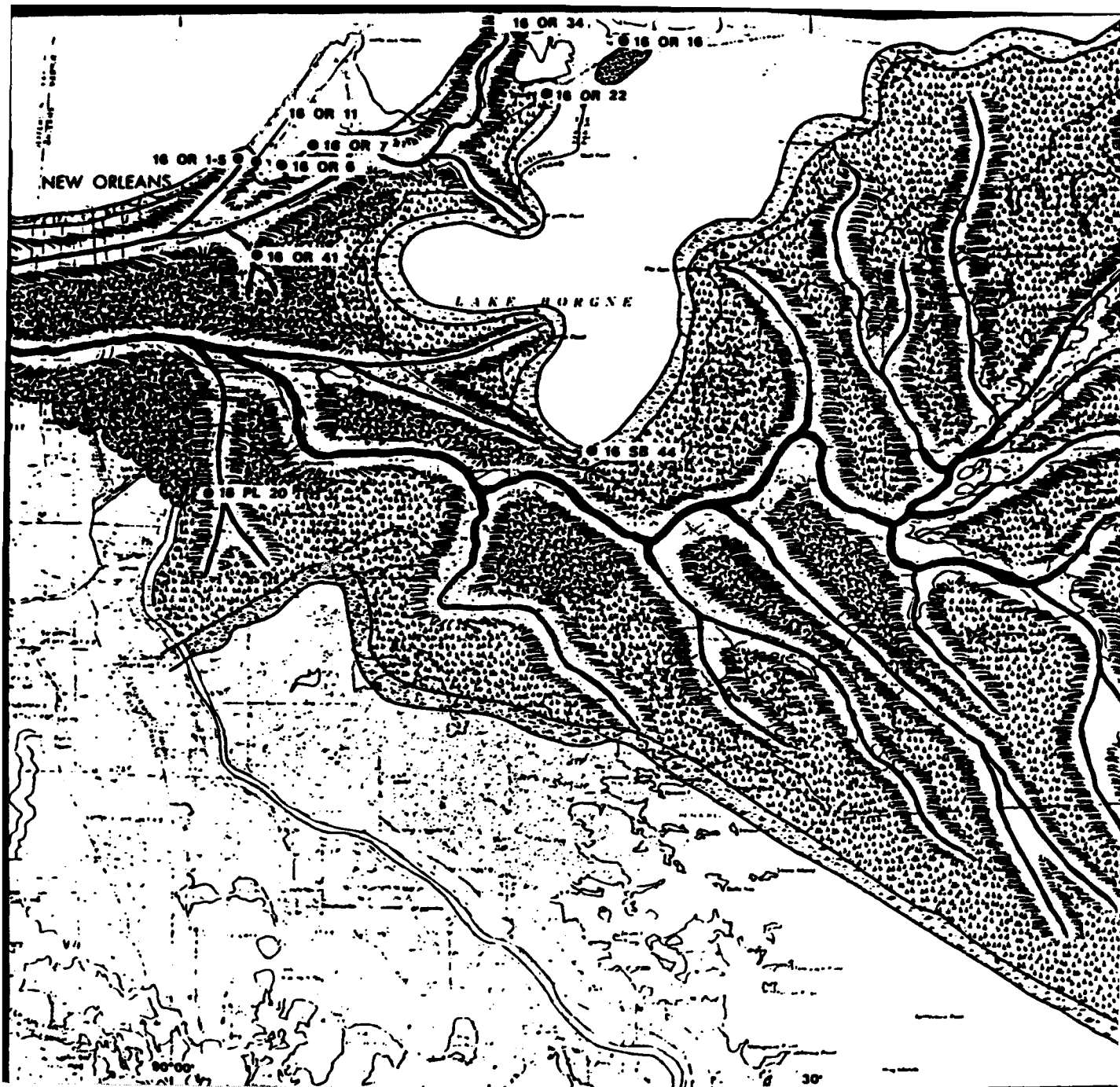
Peoples of the Tchefuncte culture were the first in the region to engage extensively in the manufacture of ceramics. Fiber-tempered and some grog-tempered or temperless sherds have been recovered from earlier Poverty Point contexts. However, these may represent primarily trade goods from the earliest pottery-making cultures to the east. The basic Tchefuncte ware is temperless or grog-tempered, with accidental inclusions of small quantities of sand and vegetable fiber. Sand-tempered wares represent a minority constituent of Tchefuncte site assemblages (Shenkel 1984:47-48).

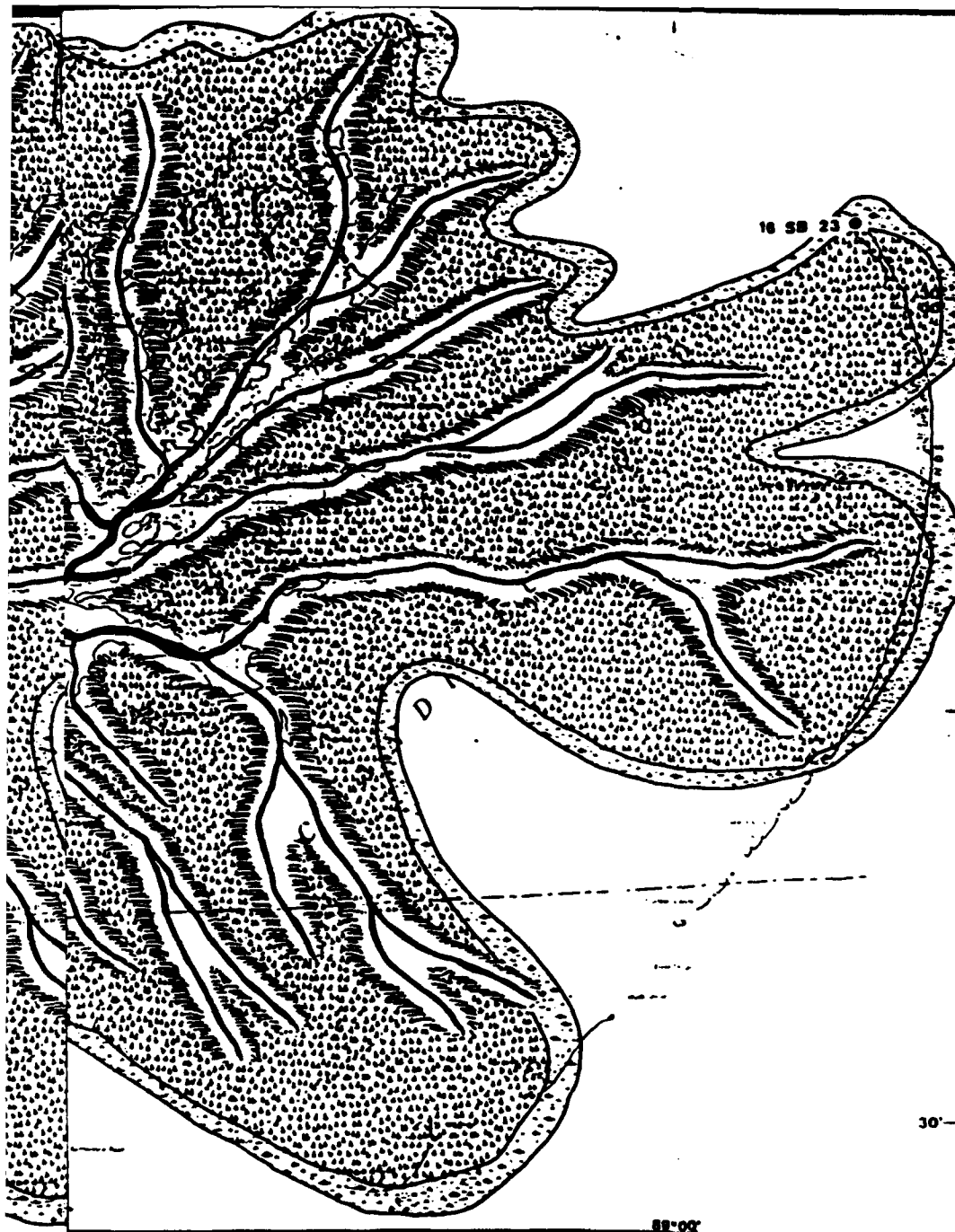
The Tchula Period was one of extensive progradation of the St. Bernard Delta Complex. A number of Tchula Period sites associated with that complex have been recorded in Orleans Parish. These include Big Oak Island (16OR6) and Little Oak Island (16OR7). However, Wiseman et al. (1979:Table 4-2) list only one site (16SB44, Shell Beach) in St. Bernard Parish with ceramics indicative of a Tchula Period occupation. Its location relative to the developing delta complex is shown in Figure 10. Wiseman et al. (1979:6-15) indicate that Tchula Period sites associated with the St. Bernard Complex were located on major beach ridges or on older, more stable portions of the delta. They suggest that "These areas may have been the most attractive for semi-permanent villages as opposed to temporary fishing or waterfowl hunting camps" (Wiseman et al. 1979:6-15).

Wiseman et al. (1979:6-13) propose two possible explanations for the small number of sites representing this period. The paucity of sites "...may reflect the unstable condition of the rapidly developing delta lobe and its unsuitability for settlement" (Wiseman et al. 1979:6-13). The alternative explanation proposed by Wiseman et al. (1979:6-13) to explain the apparent paucity of sites is "our incomplete archeological record of the area." The incompleteness of that record may be the result of the loss of sites due to subsidence and erosion, or it may simply reflect the fact that excavations have not been conducted to the bases of intact middens where Tchula ceramics may lie buried (Wiseman et al. 1979:6-13).









Legend

ACTIVE DISTRIBUTARY CHANNEL-LEVEE COMPLEX

ABANDONED DISTRIBUTARY CHANNEL-LEVEE COMPLEX

TRANSGRESSIVE BEACH-BARRIER COMPLEXES

FRESHWATER MARSH

BRACKISH MARSH

SALINE MARSH

FRESHWATER SWAMP

● INITIAL OCCUPATION SITES

○ CONTINUING OCCUPATION SITES

N

0 10 20 km

The Marksville Period

The Marksville Period is associated with a Hopewellian culture and tradition manifested throughout the Lower Mississippi Valley (Phillips 1970:7,17-18,886). The Hopewell culture's two major centers of development were in Ohio and Illinois, and date to between 200 B.C. and A.D. 400. Diffusion of aspects of the culture may have resulted from the activity of traders who established a wide-ranging network, sometimes termed the "Hopewellian Interaction Sphere."

In addition to diagnostic pottery types of the Marksville Period, conical burial mounds were characteristic of the culture. Interments are generally associated with grave goods. Some of these were manufactured from exotic raw materials (Neuman 1984:142-168).

Only one site (16SB23) dated to the early portion (Labranche Phase) of the Marksville Period has been reported in St. Bernard Parish (Wiseman et al. 1979:4-14). Its location at the distal end of a delta lobe is shown in Figure 10. Early Marksville sites are more numerous in that portion of the delta that would later become Orleans Parish (Figure 10). These sites are 16OR1-7 and 16OR16. They all were occupied initially during the Tchula Period (Wiseman et al. 1979:4-17).

Sites dated by Wiseman et al. (1979) to the latter part of the Marksville Period (Magnolia Phase) become far more numerous in the developing St. Bernard Delta. Their locations are shown in Figure 11. They include the Magnolia Mound site (16SB49) which, with its several mounds, is certainly one of the largest sites in St. Bernard Parish. Excavations were conducted for the present project at two of the possible Marksville sites (16SB39 and 16SB40) shown on Figure 11. No ceramics indicative of a Marksville occupation were recovered. However, deposits were deep at 16SB39 and sterile subsoil was not reached in the 1 x 1 m excavation unit. It is possible, therefore, that a Marksville component lies buried beneath the excavated Baytown component.

Wiseman et al. (1979:6-17) note that many of the Late Marksville sites "...were located in the vast central portion of the delta which seems to have been previously avoided." The well-developed natural levees associated with channels whose flow was now greatly diminished appear to have offered "...the best prospects for expanding settlement" (Wiseman et al. 1979:6-17).

The number of newly occupied sites, in conjunction with the presence of earlier sites that continued to be used, suggests to Wiseman et al. (1979:6-17) both an increase and a shift in population.

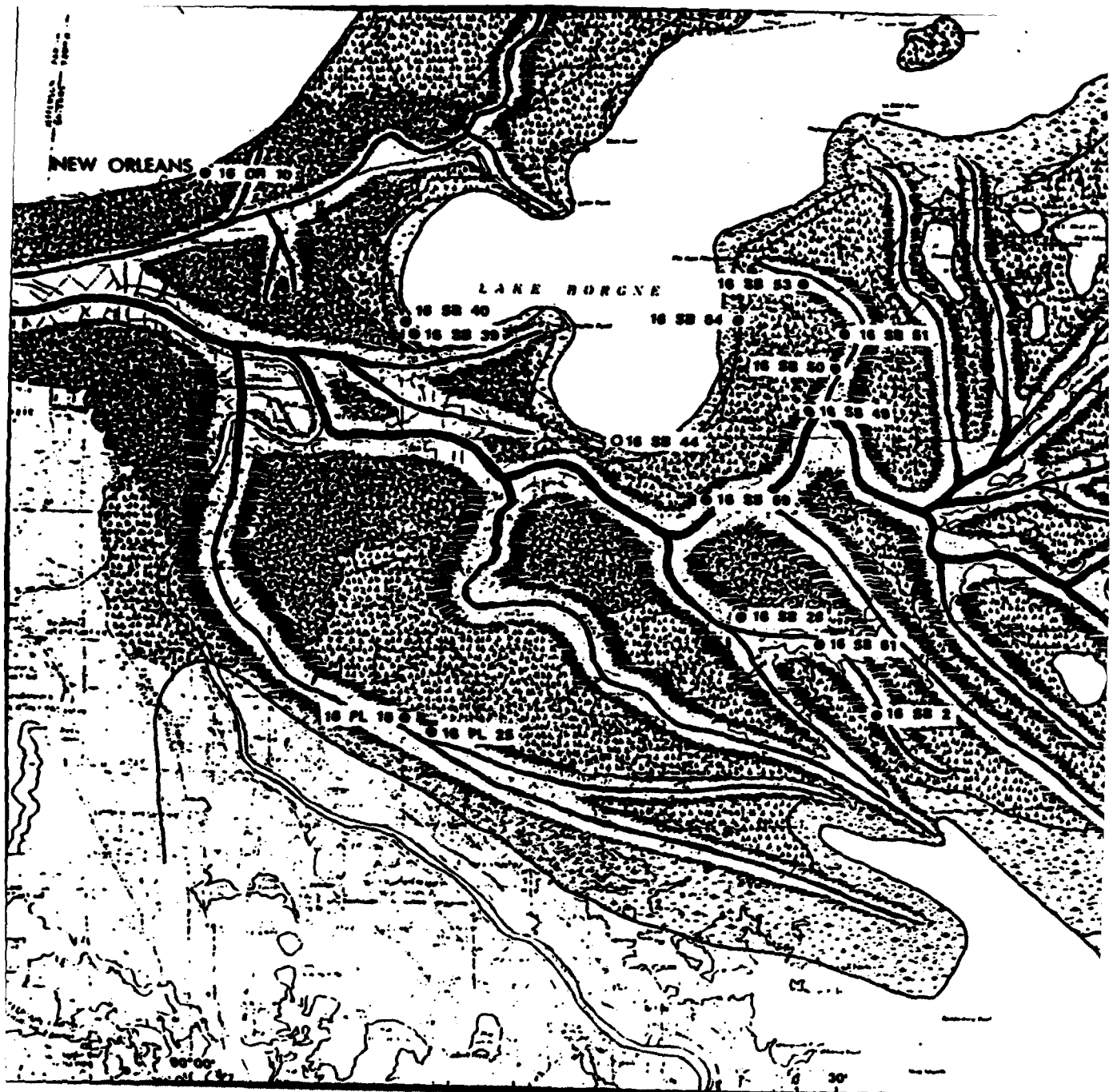
The Baytown Period

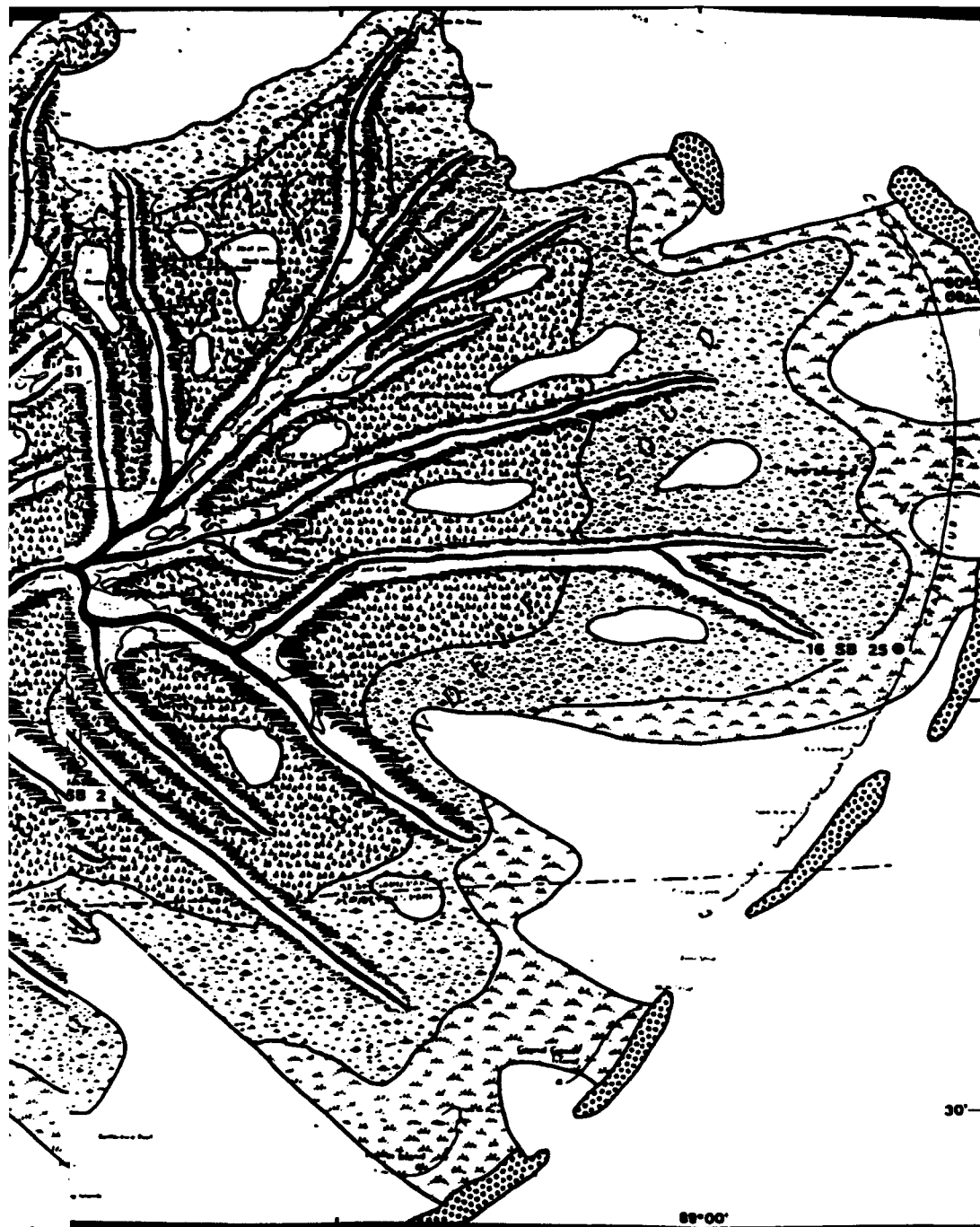
The Baytown Period has been defined rather simply as the interval between the end of Marksville culture and the emergence of Coles Creek culture. At the time of Phillips' (1970) synthesis, no area-wide horizon or period markers were known for the southern half of the Lower Mississippi Valley (Phillips 1970:901).

The Baytown Period is often referred to as the "Troyville Period" by Delta archeologists. Because of the lack of diagnostic markers and the paucity of excavated sites representing the period in southeastern Louisiana, it is often assimilated with the subsequent Coles Creek Period, and the two are together referred to and discussed as "Troyville/Coles Creek cultures" (e.g. Neuman 1984).










Wiseman et al. (1979:4-4) considered varieties of Hollyknowe Ridge Pinched, Larto Red, French Fork Incised, Pontchartrain Check Stamped, Woodville Zoned Red, and Coles Creek Incised to be diagnostic ceramics associated with the Baytown Period. They assign ten sites in St. Bernard Parish and two in Orleans Parish to the period (Figure 12). Based on excavations reported in the present volume, the intact portion of 16SB40, which is one of the sites shown in Figure 12, represents a single component dated to the Coles Creek Period. However, excavations at the adjacent site (16SB39) indicate a Baytown Period occupation. It is possible that the proximity of the two sites has created some confusion for earlier researchers.

Wiseman et al. (1979) note that at the time of their synthesis of prehistoric occupations in St. Bernard Parish, it remained difficult to identify Baytown sites on the basis of available ceramic assemblages. For this reason, they suggested that many Coles Creek sites may have been occupied during the Baytown Period (Wiseman et al. 1979:6-21). It appears that this suggestion may also be based on the notion that population size was steadily increasing from the Marksville through the Coles Creek periods (Wiseman et al. 1979:6/16-6/23).

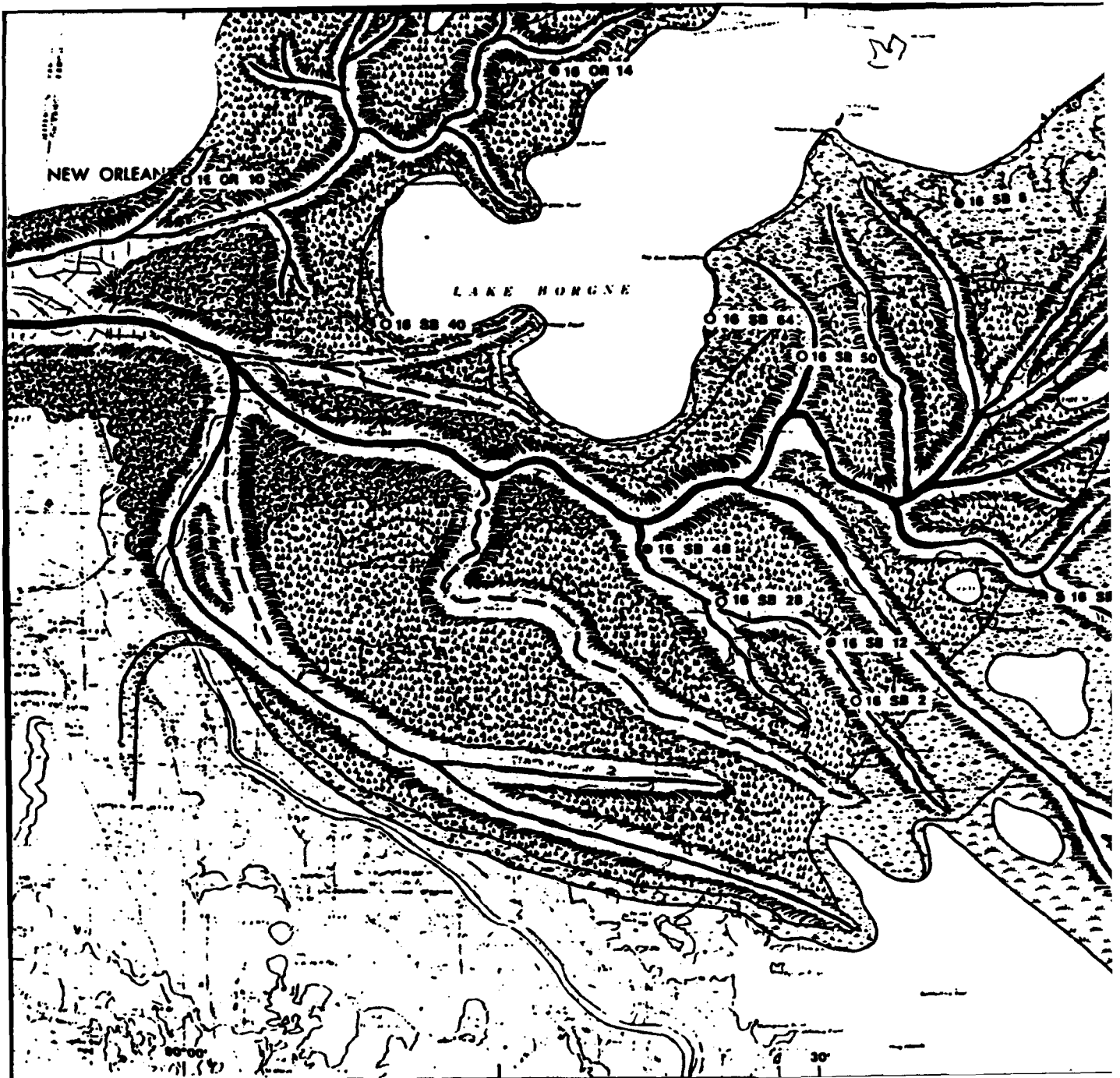


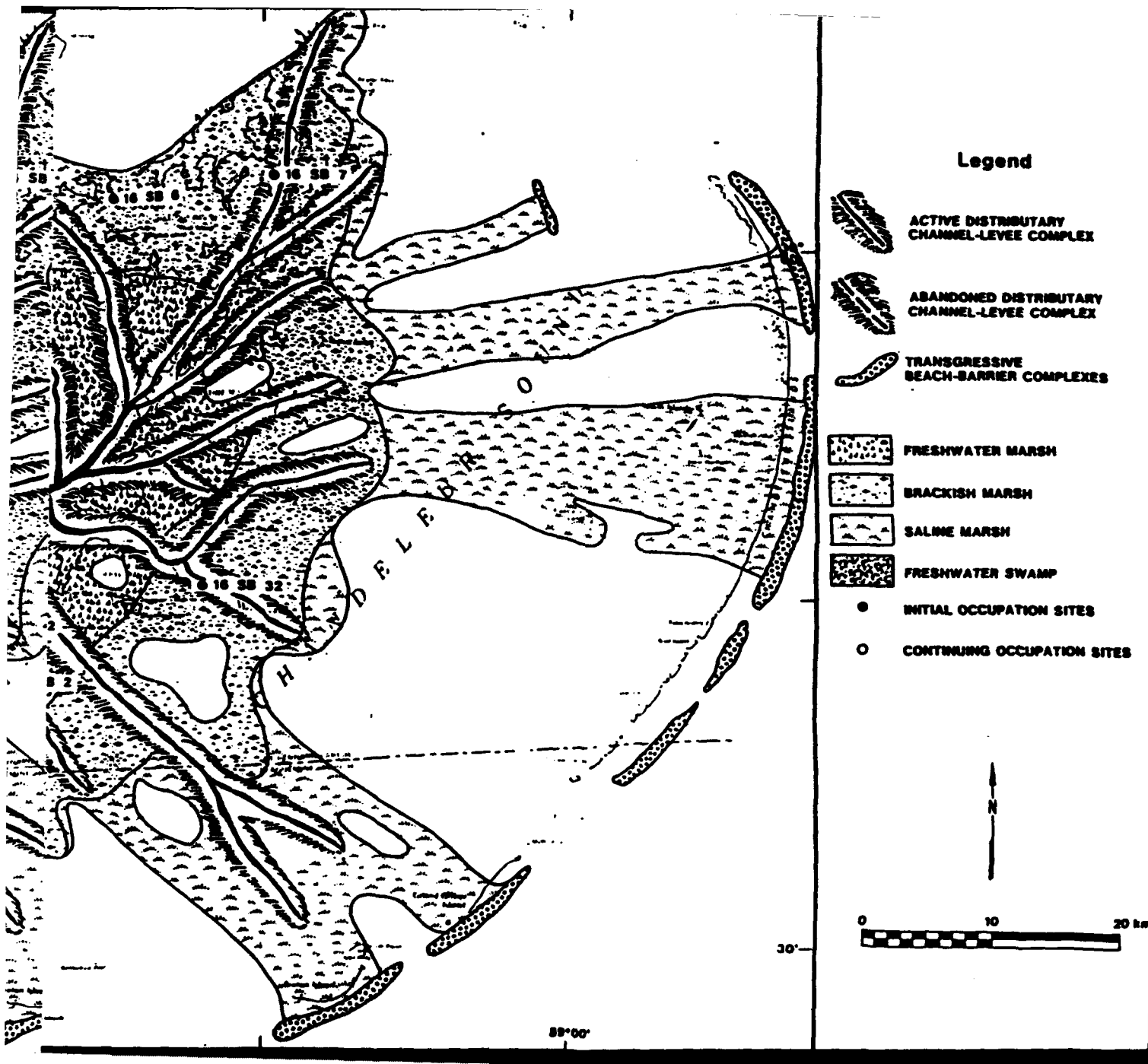


Legend

-  ACTIVE DISTRIBUTARY CHANNEL-LEVEE COMPLEX
-  ABANDONED DISTRIBUTARY CHANNEL-LEVEE COMPLEX
-  TRANSGRESSIVE BEACH-BARRIER COMPLEXES
-  FRESHWATER MARSH
-  BRACKISH MARSH
-  SALINE MARSH
-  FRESHWATER SWAMP
-  INITIAL OCCUPATION SITES
-  CONTINUING OCCUPATION SITES







The Coles Creek Period

The Coles Creek Period is the interval that begins with the emergence of Coles Creek culture in the southern part of the Lower Mississippi Valley and ends with the establishment of "full-blown" Mississippian culture in the northern part of the Valley (Phillips 1970:18). Coles Creek culture was characterized by small ceremonial centers with mounds. These were surrounded by villages of varying size. The culture developed in the area between the mouth of the Red River and the southern part of the Yazoo Basin. Its influence filtered into the delta region of southeastern Louisiana (Brown 1984:95).

Mounds associated with the Coles Creek culture generally are larger and exhibit more construction stages than those associated with the earlier Marksville culture. A more significant difference is that Coles Creek mounds are pyramidal and flat-topped, and they were used as substructures for religious and/or civic buildings. In contrast, Marksville peoples generally built conical burial mounds (Neuman 1984:167).

Relatively large numbers of Coles Creek Period sites have been reported within the St. Bernard Delta Complex (Wiseman et al. 1979:Figure 6-9). The locations of the sites in relation to the delta, which was now deteriorating, are shown in Figure 13. Comparison of this figure with Figures 10-12 shows that the number of sites representing the Coles Creek Period is more than twice that of either the Marksville or Baytown Periods.

Wiseman et al. (1979:6/23) indicate that by the Coles Creek Period, the extent of freshwater marsh and swamp had been considerably reduced in the northern part of the St. Bernard Delta. These same ecozones were increased in the southern part of the delta. The change was related to changes in the flow of the Mississippi River and its distributaries. Wiseman et al. (1979:6/23) further note that although there are many Coles Creek sites in the northern part of the delta, they appear to be small. In contrast, 16PL14 (Bayou Terre aux Boeufs site) is a multi-mound site in the southern part of the delta, and may represent a focus of settlement during this period.

The Mississippi Period

The beginning of the Mississippi Period is marked by the emergence of Mississippian culture in the

northern part of the Lower Mississippi Valley and Plaquemine culture in the southern part (Phillips 1970:18-19). The Plaquemine culture itself is sometimes considered to be the classic development of temple mound construction in the lower portion of the Lower Mississippi Valley. However, archeological excavations suggest that it actually represents a late prehistoric development of the preceding Coles Creek culture. Multi-mound construction and artifact assemblages are evidence that link the two. Absence of European trade goods indicates that the Plaquemine culture reached its zenith prior to contact (Neuman 1984:258-259).

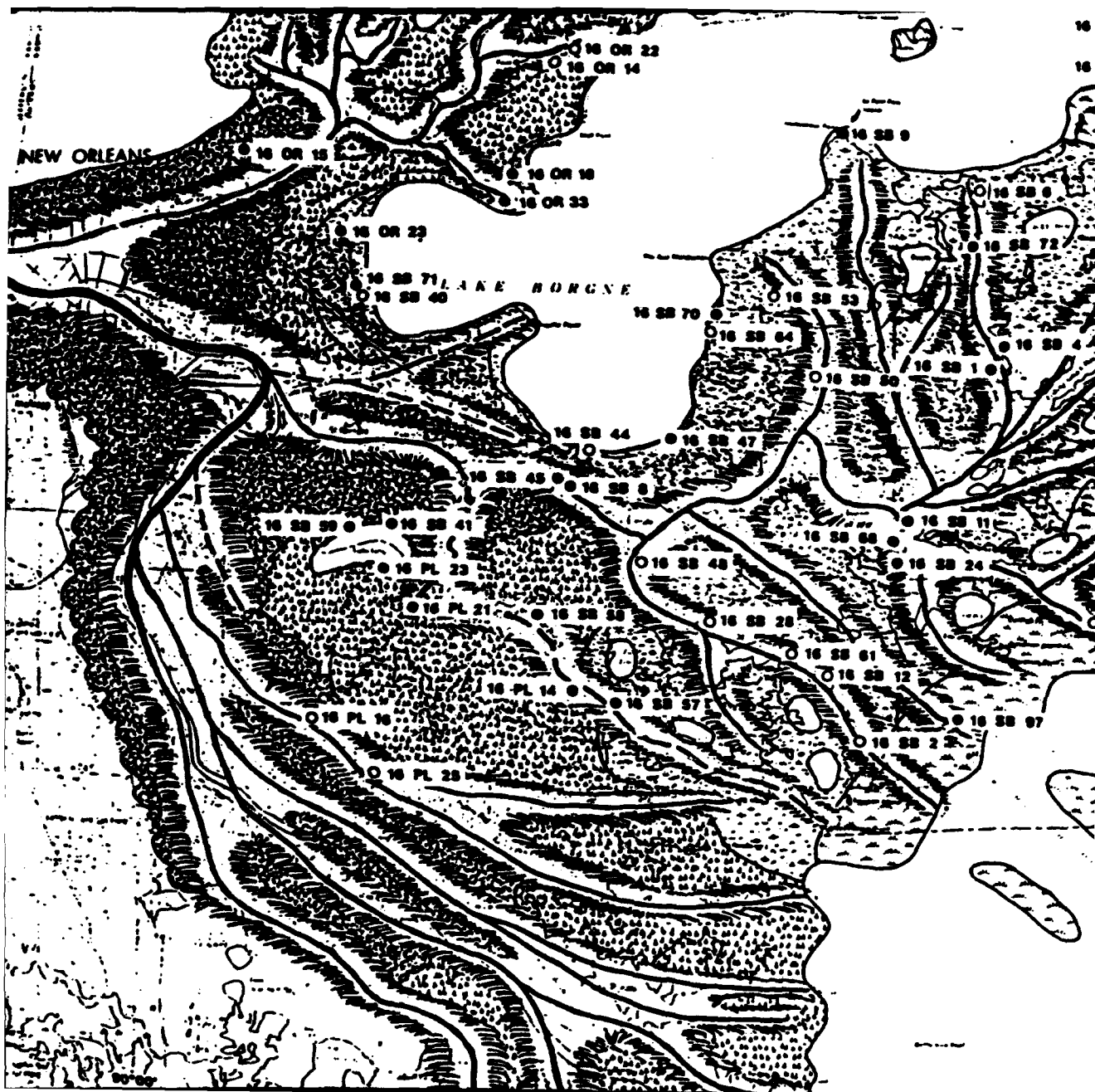
Sites dated to the period of contact represent a Delta-Natchezan phase. Proportions of ceramic types change, some new styles and types appear, and European trade goods are often found in association with the aboriginal materials (Quimby 1957:118-119,134-144).

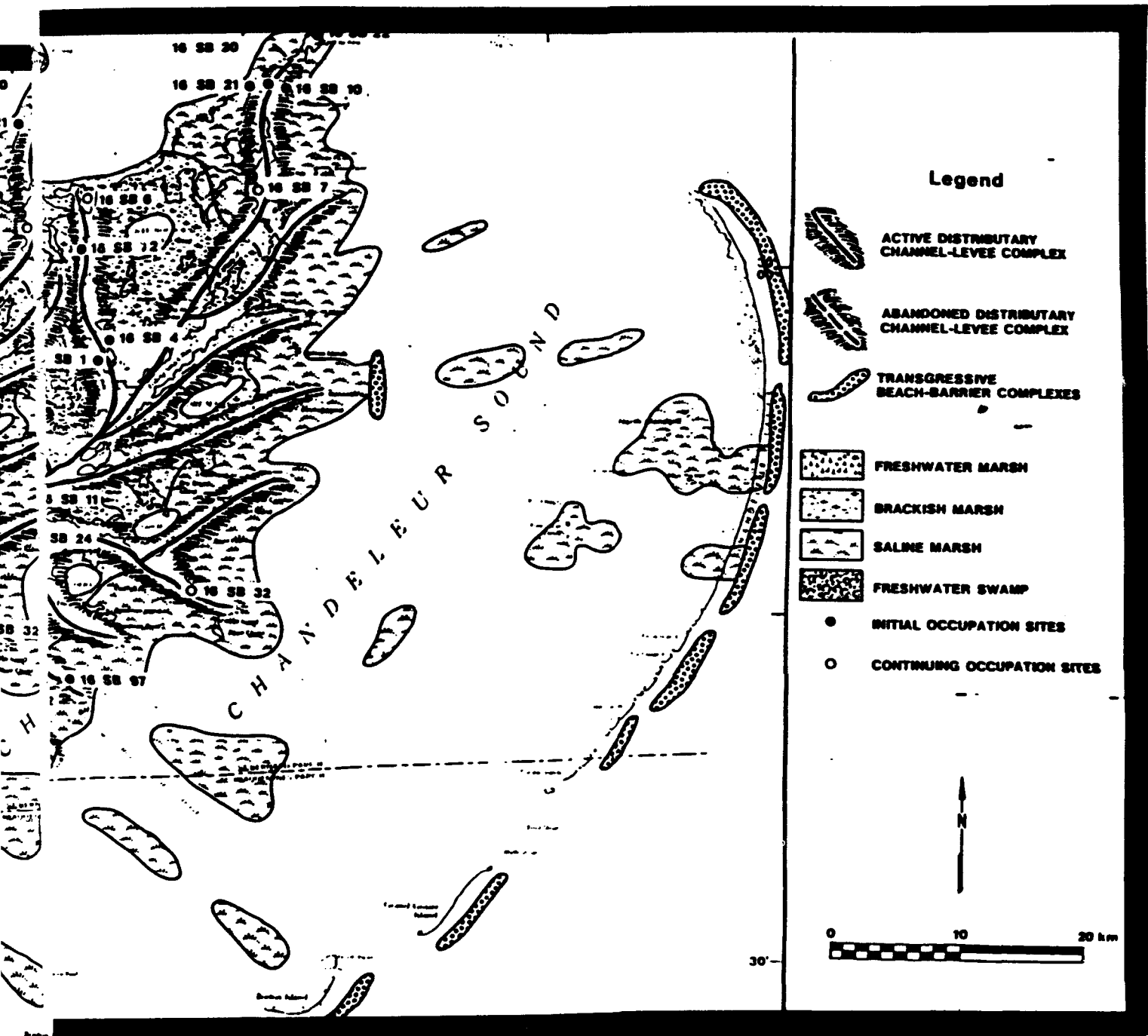
During the Mississippi Period, the St. Bernard Delta complex continued to shrink because of reduced flow of water. Environmental changes would have included a reduction in the area covered by freshwater swamp and an increase in the area covered by brackish and saline marsh (Wiseman et al. 1979:6-27). Figure 14 depicts locations of pre-Contact Mississippi Period sites within the shrinking St. Bernard Delta. The number of sites is somewhat reduced relative to that of the preceding Coles Creek Period but it is still greater than that of earlier periods.

Wiseman et al. (1979:6-27) indicate that most of the sites which yield Mississippi Period ceramics were initially occupied during one of the earlier periods. Few new sites were established in the St. Bernard Delta. To those authors,

...Many of the sites still suggest hunting and gathering camps, and probably represent only half of a subsistence pattern. The other half of the pattern is reflected in agricultural villages located on the most inland parts of the eastern delta, or even further up the alluvial valley as was suggested for the previous Coles Creek Period (Wiseman et al. 1979:6-27).

However, Wiseman et al. (1979:6-27) recognize that little is known about the extent and nature of agriculture in southeastern Louisiana during prehistoric times. In fact,

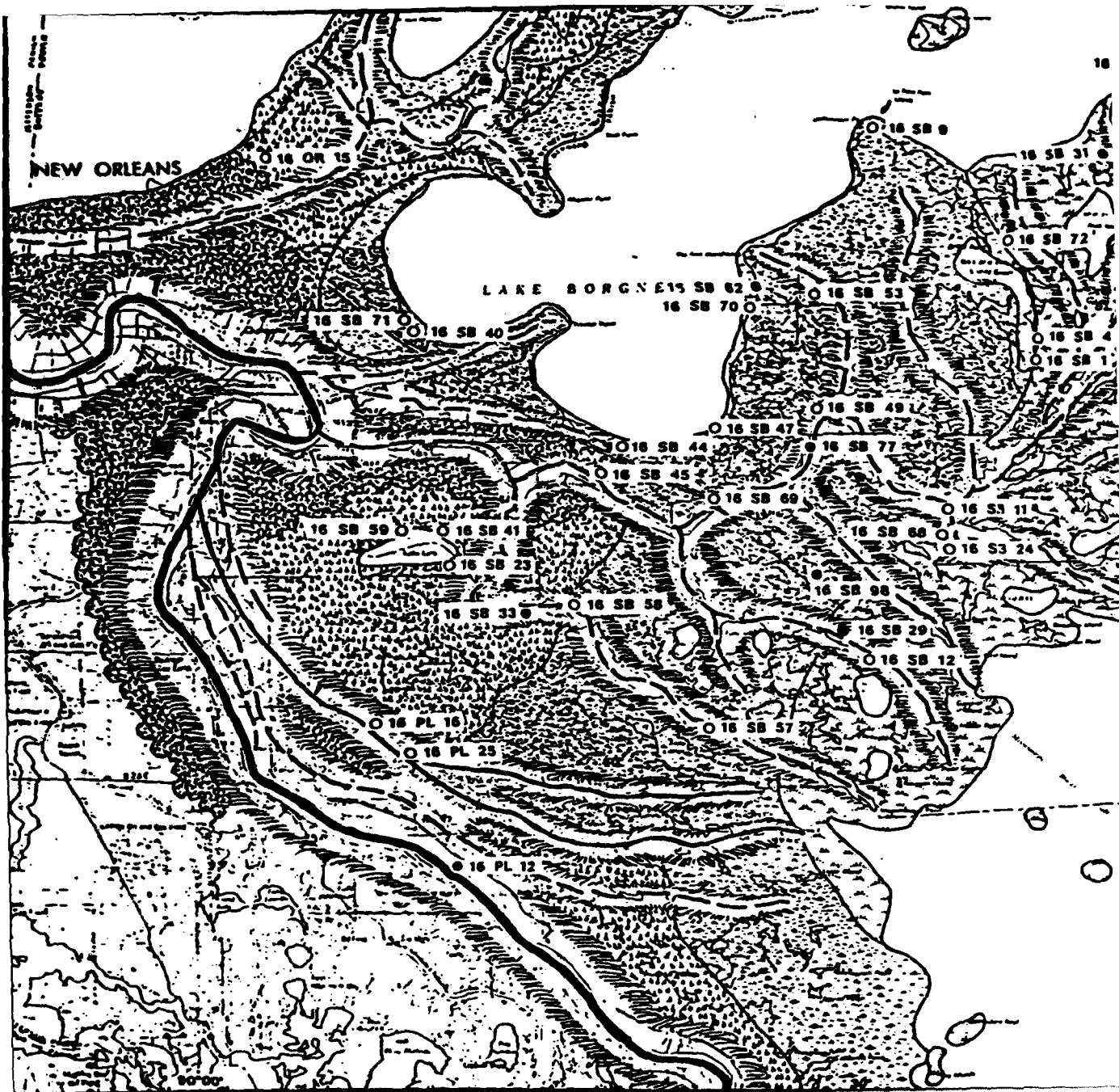


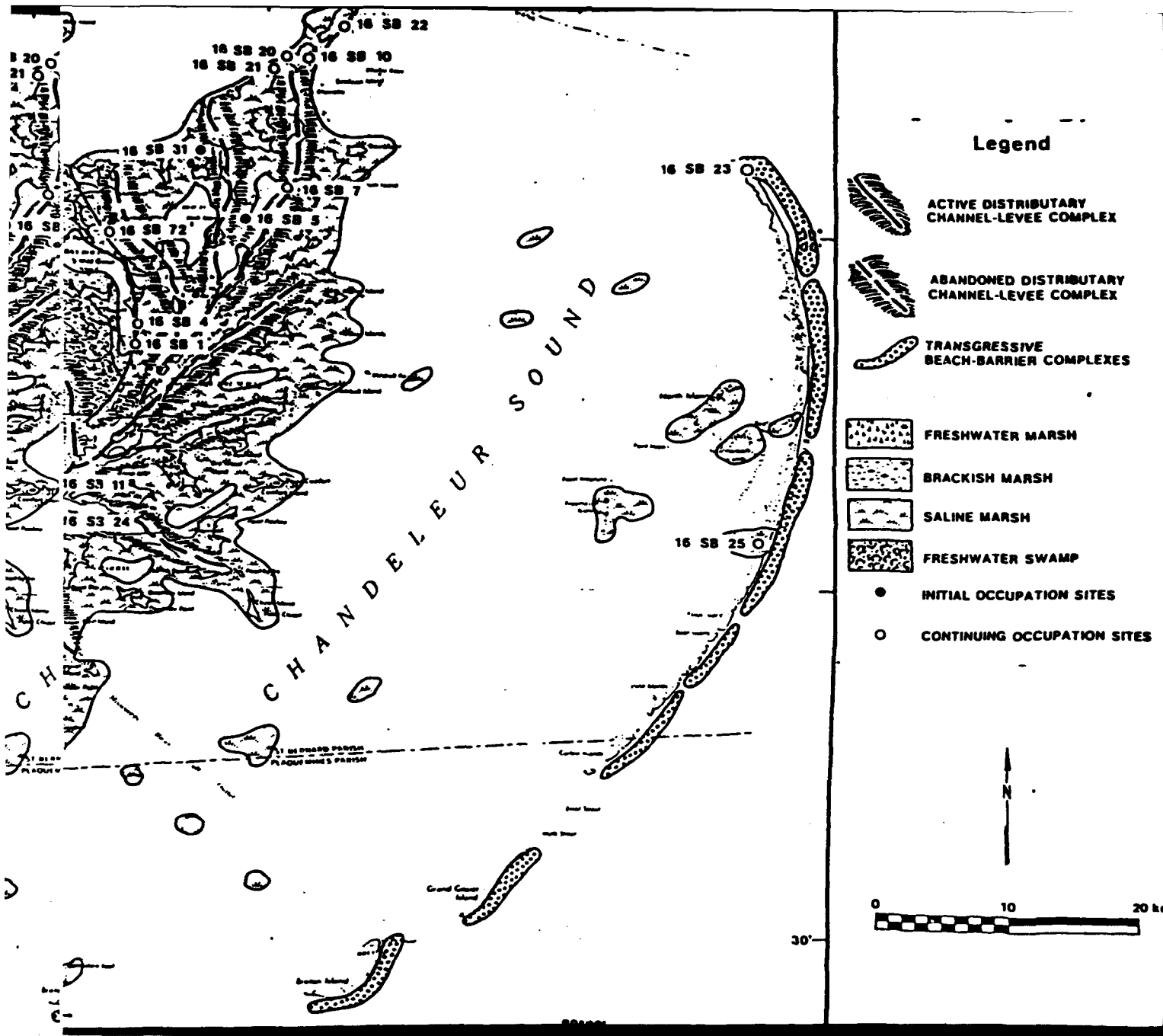


Delta during the Coles Creek
1979: Figure 6-9).

the
-9).

2





...the eastern delta sites may have been occupied by hunters and gatherers who practiced no, or only small-scale, farming throughout the prehistoric period and who retired seasonally to other hunting and gathering locales further inland or on the coast (Wiseman et al. (1979:6-29).

The Paleogeographic Interpretation of Sites in the St. Bernard Delta

Wiseman et al. (1979) interpreted site density and site location in terms of paleogeographic changes, which were the result of changes in the pattern of flow of the Mississippi River (see also Chapter 2 of this report). To some extent, subsidence and deposition are important variables because they create conditions such that only fortuitous events such as dredging will reveal the location of many sites (Wiseman et al. 1979:6/30-6/31).

Nevertheless, it appears that sites were initially occupied as an area entered the deterioration phase of the delta sequence. Such locations may have offered four advantages:

a) natural levees were still sufficiently elevated above the marsh to provide suitable habitation spots; b) water flow and consequently the violence of flooding was reduced; c) biological productivity was at a maximum; and d) a diversity of habitats existed including lake edge, bayou, marsh and natural levee (Wiseman et al. 1979:6/31).

Wiseman et al. (1979:6-31) also propose a model to explain site location in terms of "convenience, comfort, and gain." Those three factors refer to the notion that a site should be convenient in terms of location, a site should be relatively comfortable in terms of environment, and/or occupation of the site should offer some benefit such as access to a critical resource. Within the St. Bernard Delta, the hypothesis proposed by Wiseman et al. (1979:6-31), and which they state is highly speculative, is

a settlement pattern involving utilization of inland hunting sites in winter, coastal hunting sites in spring and early summer, and agricultural activities (by Mississippi period

times, at least) the rest of the year...
(Wiseman et al. 1979:6/31).

New World Research, Inc. (1983) concurred with Wiseman et al. (1979) that site location and site density are linked with environmental factors. However, they assert that cultural factors are also important and that these factors have generally, with the exception of Shenkel (1974), been neglected by archaeologists in southeastern Louisiana (New World Research, Inc. 1983:41).

Aboriginal Occupation during the Colonial Period

Identities and locations of Indian tribes in Louisiana cannot be determined for any period prior to about 1700 when literate French settlers and visitors began to record their observations regarding aboriginal occupants of the area. Despite these accounts, it remains difficult to sort pre- and post-contact culture traits. This is especially true for the lesser tribes living along the Mississippi River and other areas within southeastern Louisiana (Kniffen et al. 1987:45). Kniffen et al. (1987) provide no evidence of the identities of tribal groups that may have occupied St. Bernard Parish at the time of European contact. However, three groups that are known to have been present in nearby portions of southeastern Louisiana are the Washa, the Chawasha, and the Chitimacha (Kniffen et al. 1987:78-79).

CHAPTER 5
HISTORY OF THE STUDY AREA
by Benjamin Maygarden

The Colonial and Early American Periods (1699-1812)

During the French regime, the area that would later become St. Bernard Parish was under the direct supervision of the Superior Council in New Orleans. It did not become a civil entity separate from New Orleans until 1780 (Hyland 1980:6). A number of land grants were made along the Mississippi River in future St. Bernard as early as 1723 (Smith 1989:46).

The eastern portion of the study area may have been included within tracts stretching from the Mississippi River to Lake Borgne and granted to a Monsieur (Don Henrique) Despres (for whom Bayou Dupre was probably originally named) in 1763, or in other grants made under the Spanish in 1773 and 1774. The 1831 map of Township 13S Range 13E (Smith 1989:47) indicates that Antoine Phillipon claimed a number of tracts constituting modern Sections 25, 26, 27, and 78. Most of the present study area was situated within Section 78. Antoine Phillipon purchased a tract of 10-1/2 arpents front on the Mississippi from his brother Francois Phillipon in 1814. Francois Phillipon had purchased a 21-arpent front tract on the Mississippi from Jean Baptiste Riviere in 1809. Riviere had purchased this tract from the widow of Don Henrique Despres (Smith 1989:49).

A map dated 1810 and housed in the National Archives shows the study area as a portion of (Francois) Phillipon's Plantation. When the tracts constituting the Phillipon Plantation were consolidated, the back lands of the plantation were considerably wider than its river frontage and were bisected by Bayou Dupre (variously spelled Bayou Despres, Desprez, and Deprets).

Settlement prior to the arrival of the Canary Islanders in the St. Bernard area at the end of the 1770s was confined largely to the upper end of the future parish. Indigo cultivation was commonly engaged in by planters who had sufficient capital and labor (Smith 1989:48). However, the Louisiana indigo industry collapsed in the 1790s from a variety of causes, and most St. Bernard planters who were able to do so converted to sugar cane cultivation. St. Bernard planters Antonio Mendez and Manuel Solis successfully granulated sugar as early as 1787 (Hyland 1980:6).

A number of plantations in the area also produced commercial quantities of cypress lumber. Cypress was much in demand in New Orleans and the Caribbean. Numerous planters in the St. Bernard area had canals dug on their plantations to float logs from the *cyprières* on their back lands and to provide millraces for sawmills (Smith 1989:50).

The Louisiana lumber export business went into decline during the American Revolutionary War due to the loss of markets (Moore 1983:43). However, it revived in the 1790s as the Spanish Crown granted Louisiana a monopoly on the manufacture of sugar boxes for Spanish sugar-producing colonies (Smith 1989:50). The study area, on the shore of Lake Borgne, has not supported any significant stands of cypress in historic times. In 1819, James L. Cathcart, under commission from the U.S. Navy, examined southern Louisiana for timber suitable for naval construction. At Lake Borgne, Cathcart described the timber as "of such a quality, so dispers'd & so small in quantity, as it is unworthy attention, besides the land on which it grows, is private property" (Prichard et. al. 1945:883).

After taking effective control of Louisiana in 1769, Spain sought to encourage colonization by Spanish, Acadian, and other Catholic nationalities to counterbalance the English presence in West Florida. The Spanish Crown granted large tracts in future St. Bernard Parish to Governor Bernardo de Galvez with the proviso that he use the land to encourage settlement. Spain recruited several hundred soldiers (with families) from their troops in the Canary Islands to colonize lands in Louisiana, offering the colonists transportation, land, and supplies. The *Isleños*, as the Canary Islanders were called, arrived in Louisiana in late 1778 (Din 1988:51-53).

Five settlements were established in Louisiana for new colonists. New Iberia was settled by Spaniards from Malaga and Grenada. The other settlements were Galveztown, Barataria, Valenzuela, and La Concepción or San Bernardo. The St. Bernard district was organized under the name of "La Concepción" and established on February 17, 1780. It soon became known as San Bernardo in honor of Galvez (Hyland 1980:7). Pedro Marigny (Pierre de Marigny de Mandeville), who also donated some of his vacant lands to settlers, was appointed first commandant of the district (Din 1988:51).

Many of the Isleños were settled on the ridge of higher ground in the interior of the San Bernardo district along Bayou Terre aux Boeufs (Bayou La Loutre). Their settlement pattern was dispersed, as no town was established. Property boundaries were indistinct, the rear lands of their tracts being marshes, swamps, and virtually impenetrable wilderness. Consequently, within a decade of their arrival, many of the Isleños had turned from farming to fishing as their principal occupation. Until 1786, the population of Terre aux Boeufs was almost entirely Spaniards and Isleños, but in that year a party of Acadians arrived. The Spanish and Acadian settlers intermarried and assimilated together over succeeding generations (Din 1988:54-56).

The population of the San Bernardo district was only 576 individuals in 1785 and 661 persons in 1788. The 1795 census revealed only 61 slaves in all of San Bernardo. Most of these slaves were held by French colonists along the Mississippi River on the larger plantations. No Isleños were shown to own slaves in 1795, but the accuracy of these census figures is in doubt (Din 1988:55).

The large expanses of forest, cypress swamp, and marsh in southern Louisiana during the colonial period provided opportunities for slaves to flee their masters and become fugitives, often for years at a time. Fugitive slaves were called *marons* or *nègres marons* in French, *cimarrones* in Spanish, and "maroons" in English. By the 1780s, maroons had become a prevalent problem for the slave-owning society of Louisiana. Their numbers had swelled to include numerous families living in huts in permanent settlements, fishing, hunting, and engaging in agriculture for their sustenance. In some documented instances, maroons participated in illicit lumbering in the *cyprières* supplying white sawmill owners with logs that had been cut and squared (Hall 1992:207).

The geographic centers of the maroon bands and their activities were the Bas de Fleuve, an area of the Mississippi River below New Orleans, and Lake Borgne. The maroons established a sizeable permanent settlement at a place called Ville Gaillarde, which Hall (1992) identifies as lying in a large area of St. Bernard on the eastern side of Lake Borgne. Bayou St. Malo and Bayou Maron on the eastern side of Lake Borgne are identified by Hall (1992:214) as associated with maroon settlement. Access to the maroon communities by land was considered virtually impossible; they were approachable from Lake Borgne only on numerous small

bayous. Some of these bayous were too constricted to admit even a pirogue. Others reached from Lake Borgne to the Terre aux Boeufs ridge, where the maroons grew corn (Hall 1992:212).

The maroons of lower Louisiana had a charismatic leader named St. Malò, a runaway from the D'Arensbourg estate on the German Coast. He accumulated a large following, and established a number of settlements, including Ville Gaillarde and another at Chef Menteur. By 1782, slaveowners in the region felt that the presence of the St. Malò band was intolerable. In March 1783, after two previous expeditions against the maroons had been unsuccessful, Don Guido Dufossat led an attack from Lake Borgne on Ville Gaillarde that resulted in the death of three maroons and the capture of 32. Eleven maroons escaped, including St. Malò himself (Hall 1992:216-217). Lieutenant Colonel Francisco Bouligny undertook another expedition to Ville Gaillarde in 1784, which resulted in the capture of St. Malò and 16 others. These maroons and others arrested elsewhere, eventually numbering 60 persons of both sexes, were imprisoned in New Orleans. Most were punished, with varying degrees of severity, while St. Malò and several others were executed (Hall 1992:228-234).

The execution of St. Malò did not eliminate the problem of the maroons. Several fugitive slaves remained at large after the Bouligny expedition, and others regularly fled their masters to the freedom of the dense swamps and trackless marshes. In 1799, the planters of the upper portion of the San Bernardo district complained to the Governor that maroons, operating from settlements on Lake Borgne, were stealing their goods and animals. Rewards of four pesos were offered for any fugitive slave apprehended in New Orleans, seven pesos for a slave captured in the cypress swamps, and ten pesos for a slave captured on the lakes or islands. However, efforts to apprehend the *cimmarrones* at this time were apparently unsuccessful (Din 1988:59-60).

At the end of the colonial period, approximately 800 persons resided in St. Bernard. The inhabitants grew sugarcane, cotton, and indigo on the large plantations, and produced corn, beans, poultry and eggs, butter, hogs, and assorted vegetables on the smaller farms. The initial reaction of some American observers to the inhabitants of the Terre aux Boeufs was not uniformly favorable. Dr. John Watkins, sent by Governor Claiborne to visit the settlements, described the

residents as poor and humble, but also as indolent and ignorant, and as people who "idolize their priests, and feel little attachment for anyone else" (Din 1988:60).

Fishing was doubtless an occupation of some St. Bernard inhabitants, and a village of "Spanish Fishermen" was located adjacent to the study area on the western side of Bayou Bienvenue in the early nineteenth century (Latour 1816:84). Latour relates that after the completion of canals on the Villere, Lacoste, Ducros, De La Ronde, and Phillipon plantations linking Lake Borgne with the east bank of the Mississippi, fishermen from Lake Borgne used the canals to bring their catch in pirogues from the Lake to the heads of the canals. Wagons would then load the catch and carry it to market in New Orleans (Wicker et. al. 1982:72).

The War of 1812

St. Bernard Parish was the scene of the British attempt to approach New Orleans in the winter of 1814-1815, culminating in the Battle of New Orleans on the Chalmette and Rodriguez plantations. Military events occurred in the immediate vicinity of the study area during this campaign and resulted in the construction of substantial, permanent fortifications by the United States in the antebellum period.

On September 18, 1814, the Committee of Public Safety in New Orleans wrote General Jackson describing possible routes the British could take to attack the city. No mention was made, however, of the route the British did eventually take, from Lake Borgne up Bayou Bienvenue and the Villere plantation canal to the east bank of the Mississippi (Casey 1963:3).

Jackson realized the strategic importance of Lake Borgne, but American command of the Lake was lost on December 13, 1814, when an American gunboat flotilla was defeated by British barges. On December 15th, an officer informed Jackson that it would be possible for the British to ascend Bayou Bienvenue and flank Jackson's line (Casey 1963:44). In fact, on December 20th, a British officer bribed three local fishermen, Antonio el Italiano, el Campechano, and Antonio el Portuguez, to show him a route from Lake Borgne to the Mississippi River. They obligingly showed him Bayou Bienvenue and the Villere canal (Latour 1816:83).

On December 21st, the Americans placed a picket force of 11 men at the village of Spanish fishermen at

Bayou Bienvenue, about one and one-half miles from its mouth at Lake Borgne. This small force patrolled the area the following day, but was surprised and captured to a man about midnight on December 22nd. Before noon the next day, a substantial British force had reached the Villere plantation house. Jackson was astounded when he received news of the arrival of British troops at the River via the Bayou Bienvenue route. Jacques Villere, owner of the Villere plantation, was a Major-General of Louisiana Militia and had been placed in charge of the district between the River and Lake Borgne. He was heavily criticized for not having obstructed the bayou and the plantation canals, thus allowing the British to make a seriously threatening approach by an unexpected route (Casey 1963:44-45).

For the remaining weeks of the campaign, the British maintained a base at the mouth of Bayou Bienvenue, from which all of the men and materiel present at the Battle of New Orleans passed from Lake Borgne to the assembly depot at the Villere plantation. The efficiency and energy by which the British moved artillery and ordnance from the Lake to the Villere plantation, along what had seemed an insignificant bayou, was remarkable (Casey 1963:59). A number of earthworks or redoubts were constructed by the British before the Battle of New Orleans on January 8, 1815, and subsequent to it as the British forces retreated and re-embarked at Lake Borgne. None of these sites lies within the present study area. All are located on the Orleans Parish side of Bayou Bienvenue or well beyond the MRGO Canal in St. Bernard Parish. Their historical and archeological significance has been ably discussed by Wicker et. al. (1982).

The British presence in St. Bernard during the campaign was disruptive beyond the battlefield. The British sent a contingent of Black troops to the Phillipon plantation, of which the study area was a part. Scores of slaves from surrounding plantations fled to the British forces in the weeks of the campaign. At the conclusion of operations, the British refused to turn over almost two hundred of the refugee slaves to the Americans, insisting upon considering them as deserters. British troops appropriated livestock from the plantations they occupied, and when these supplies were exhausted, went farther afield, as far as the end of Terre aux Boeufs and English Turn. Latour in 1816 estimated losses to local plantations in slaves, cattle, horses, buildings, and furniture at \$200,000 (Smith 1989:50).

Fortifications Erected after the War of 1812

Tower Dupre. The route taken by the British to the east bank of the Mississippi during the 1814-1815 campaign demonstrated the strategic importance to New Orleans of Bayou Bienvenue and the potential importance of Bayou Dupre, as it allowed access to the River via the sawmill canal on the Phillipon plantation. Following the Battle of New Orleans, Jackson ordered a redoubt built on the Phillipon canal at the back of the plantation, but it was abandoned by March 17, 1815 (Smith 1989:51).

In 1817, military engineer Simon Bernard surveyed the coastal regions of south Louisiana and recommended that a fortification be constructed at the mouth of Bayou Dupre on Lake Borgne (Robinson 1977:25-30). Plans were submitted to the Secretary of War by a board of engineers in 1821 (Sutcliffe 1972:155) and a building contract was awarded in 1829 (Robinson 1977:47). The location of Tower Dupre is shown in Figure 15.

The fort has been popularly referred to as a "Martello tower," after a structure in the Bay of Martello in Corsica, but it is not a true Martello tower in design. It is disqualified by its hexagonal shape, without annular vaults or internal barbette gun platforms (Robinson 1977:47). The plan for Tower Dupre, as the fort was officially named, called for a brick structure some 150 yards inland from the shore of Lake Borgne. The Tower was nearly 37 feet high with a diameter just over 41 feet at ground level. The walls were six feet thick at ground level and four feet thick at the third level. The Tower was built upon a massive framework of cross-timbering known as a "grillage" as was required by the marshy ground (Price 1989:28).

The ground floor had musket loops and the second floor was to contain six carronades. A drawbridge over a wet ditch provided access to the tower. A ground battery of an additional 15 guns was to be constructed behind a parapet rising nine feet above ground level, facing the lake. As the fort was eventually constructed, the ground battery had a four-sided rampart rather than the three-sided rampart in the 1817 plan. The ground battery rampart as actually built was also asymmetrically oriented in relation to the tower, in contrast to its symmetrical placement in the original

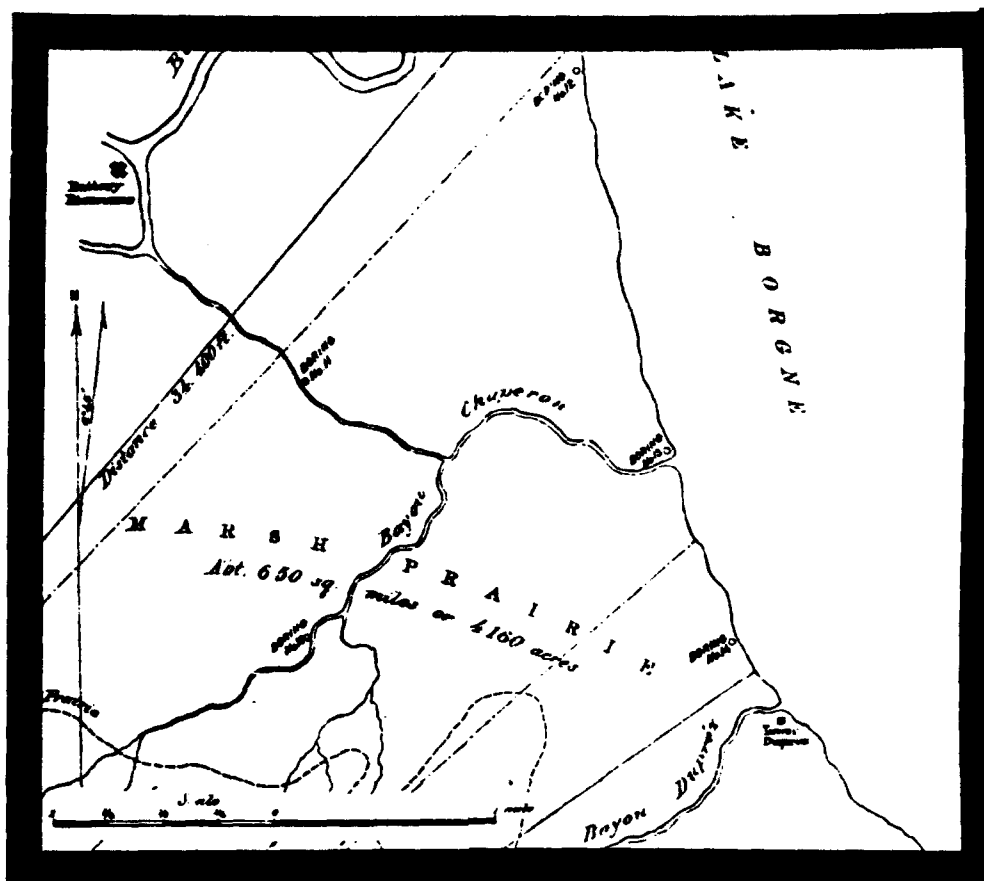


Figure 15. Excerpt from an 1874 map made by order of the Commission of Engineers. The map was entitled "Survey of Proposed Mississippi River Flood Outlet into Lake Borgne" and it shows the locations of Tower Dupre (Martello Castle) and Battery Bienvenue.

plan. The peacetime garrison was envisaged as 50 men and the wartime garrison as 120 men (Price 1989:28-29).

Tower Dupre was completed in July 1830 (Casey 1983:56) at a total construction cost of over \$16,700 (U.S. Government 1860:305). The construction of a ground battery in front of the works was slowed and the tower damaged by a storm in August 1831, delaying the deployment of a garrison there until 1833. A garrison of only three men was placed there from Fort Wood (Fort Macomb) and a reduced complement of cannon was installed, consisting of four 24-pounder guns in the ground battery (rather than the 32-pounders recommended) and eight guns in the tower. The garrisons of the Lake forts were withdrawn during the Seminole Wars of the 1830s and the Mexican War in the 1840s and for most of these decades Tower Dupre was in the hands of a single caretaker (Casey 1983:56) who was paid \$25 a month in 1844 (Price 1989:30).

On February 9, 1842, the United States government proclaimed a military reservation surrounding Tower Dupre to a distance of 200 yards from the structure. The Louisiana Legislature approved the cession of the tract on June 1, 1846, but it appears that proprietorship of the tract surrounding Tower Dupre was unclear and was not legally resolved as late as 1886 (Greene 1982:278).

Tower Dupre required a great deal of upkeep and repair. By 1841, it was already deemed unserviceable because of deterioration. It had subsided more than two feet. The Fortifications Board decided to reduce the height of the Tower by one story to alleviate subsidence. Renovations began in 1842 and were completed the following year at a total cost of \$3,500 (Price 1989:30).

In 1848, a new roof and cupola were added and a revetment constructed on the lake shore. The office of the Secretary of War reported to Congress in 1851 that \$32,317 had been spent to date on construction and repair of Tower Dupre. At this time, the fort contained four 24-pounders, two heavy eight-inch howitzers, and one heavy 10-inch mortar (U.S. Government 1851:22-23). In 1852, the pintle blocks and traverse circles of the cannon were replaced, and in 1855, a levee was built around the fort and ground battery as a protection against high tides of Lake Borgne (Casey 1983:56).

It was reported in February 1854 that the parapet of the exterior work was beginning to subside and wooden portions of the works were deteriorating. Also, the ditch surrounding the tower had become filled with sediment to a level within six inches of the surface of the parade. The following year, the palisade connecting the battery to the Tower was repaired and a levee erected to reduce the damage from high tides. Despite the construction of the levee, Keeper Manuel Gerpas reported in August, 1860, that a storm had flooded the inside of the tower with five feet of water and eroded 35 feet of the battery wall (Greene 1982:279).

At the outbreak of the Civil War, there was no garrison at Tower Dupre, but five barbette guns and six defensive howitzers were located there (Stewart 1903:763). However, rumors that Union forces were preparing to occupy it caused Confederate forces to man the fort. The five 24-pounders of the ground battery then in place remained without ordnance (Price 1989:30). Confederate forces maintained a garrison there until April 1862, when the fall of New Orleans caused it to be abandoned. On May 6, 1862, Union forces found the Tower deserted but four of its 24-pounders intact (Casey 1983:57). In March, 1863, the entirety of the garrison of Tower Dupre consisted of four men of Company D, First Infantry Regiment, Louisiana Native Guards (an African-American regiment), on detached service from Fort Macomb (Greene 1982:280). In August 1864, General T.W. Sherman reported only a small picket force at Tower Dupre, possibly of troops from the 74th Colored Infantry who were stationed at Fort Pike, Fort Macomb, and Battery Bienvenue (Davis et. al. 1893:872).

After the Civil War the Tower was unoccupied. In 1870 it was reported to be in dilapidated condition. The interior was renovated and a caretaker placed in charge (Price 1989:31-32). An 1872 plan, reproduced in Figure 16, shows the relationship of the Tower and its related fortifications to Bayou Dupre and Lake Borgne at that date.

The ship canal from the Mississippi River through Bayou Dupre and the widening and straightening of the bayou for much of its length in the early 1870s did not revive the military significance of the tower (Greene 1982:281-282). By the 1880s, the Tower was deemed extraneous and unserviceable by the United States, and there were no further appropriations for its maintenance (Casey 1983:57). The last fort-keeper was discharged in 1887, and the final armament report for Tower Dupre in

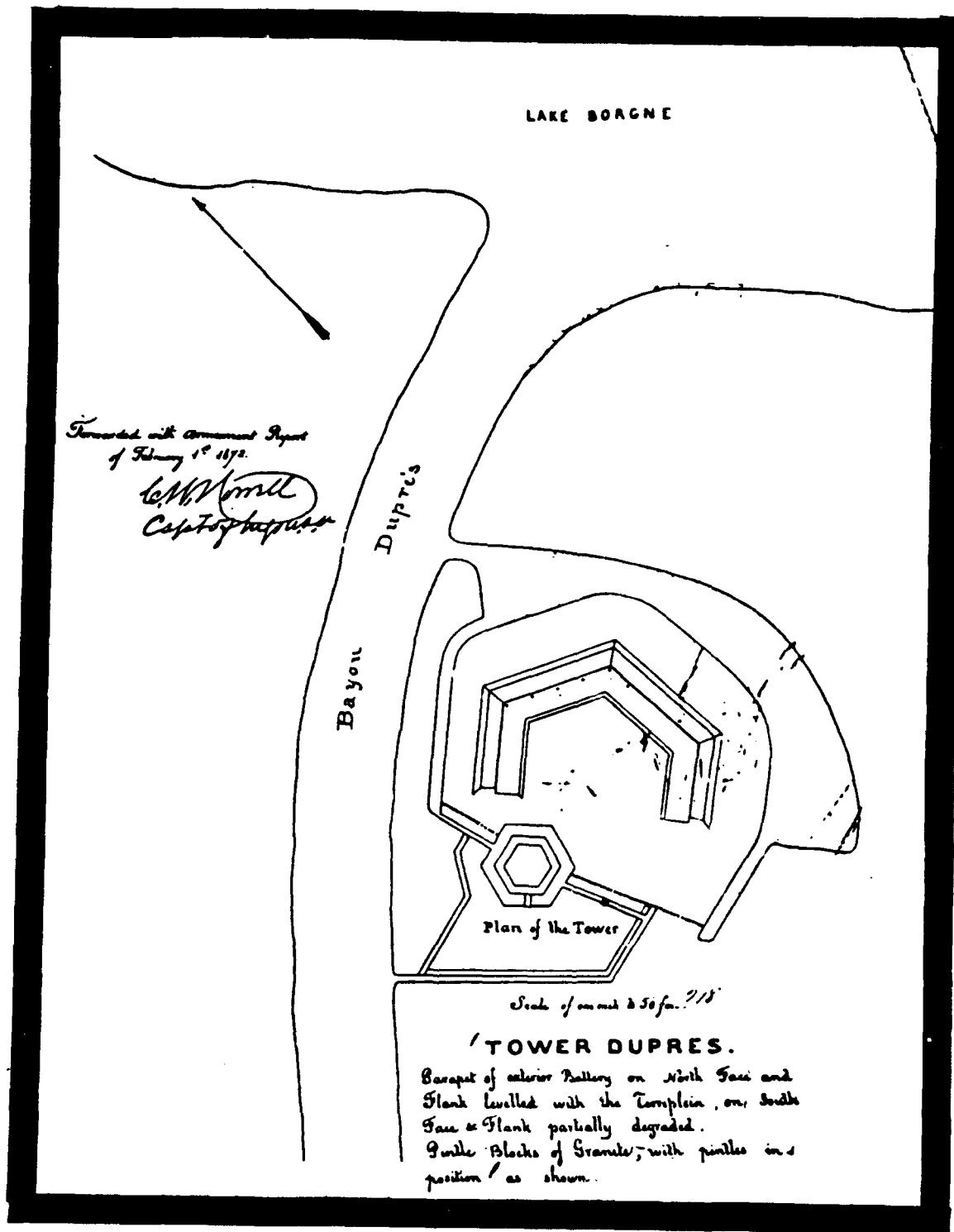


Figure 16. Plan dated 1872 as reproduced in Greene (1982:564). The plan shows Tower Dupre (Martello Castle) and related fortifications.

1892 stated there were "no guns, no platforms, the work in ruins" (Price 1989:32-33).

Photographs taken of Tower Dupre in 1915 show the waters of Lake Borgne already encroaching on the fort structure. The United States sold the work to Merrill Perez in 1956 (Martin 1983) for \$2,500. His family has used the fort as a private fishing camp. A new roof, floors, and protective concrete bulkheads have been added to the structure. The shore of Lake Borgne has moved more than 150 yards inland from the Tower. The action of waves and wind, notably during Hurricanes Betsy, Camille, and Juan (Price 1989:32), as well as a heavy winter storm of January 1983 (Martin 1983), have caused portions of the Tower's brickwork to fall into the lake.

Battery Bienvenue. The intersection of Bayou Bienvenue and Bayou Mazant or Maxent (now Bayou Villere) lay on the route taken by the British forces in 1814-1815. Upon their withdrawal, the confluence of Bayou Bienvenue and Bayou Mazant was fortified with an earthen star redoubt mounting one 24-pounder and one 18-pounder. This redoubt was designed by Henry S. Latrobe, and was the precursor of Battery Bienvenue. Its guns were directed, as were those of its successor, down Bayou Bienvenue toward Lake Borgne. The Fortification Board considered a number of more substantial works to replace the redoubt (Casey 1983:25). The plan settled upon in 1817 envisaged a peacetime garrison of 25 soldiers and a wartime garrison of 224, serving thirty 24-pounders and two 10-inch mortars. Its cost was estimated at \$94,582 (Robinson 1977:47).

Construction of the new Battery Bienvenue began in December 1826. Its location, as depicted on a map dated 1874, is shown in Figure 15. Engineering difficulties were presented by the marshy ground at the battery's site. A contemporary commentator stated that an enemy would "find scarcely a foot of ground to stand upon within three miles of the work" (Robinson 1977:46). The earthen fort was to be constructed on a *grillage* of timbers and as built was capable of accommodating twenty 24-or 32-pounders, two 13-inch mortars, and a garrison of one company (Casey 1983:25).

The work consisted only of a battery of cannons, and a barracks, cistern, and magazine surrounded by a wide, water-filled ditch and by masonry revetments. Despite the difficulties of construction at the site, the Battery was completed within two years (Robinson

1977:47). Under the direction of Captain William H. Chase of the Army Corps of Engineers, the Battery was constructed by the contracting firm of Underhill and Strong, employing skilled African-American masons, carpenters, and mechanics (Transit Readers' Digest 1980). Whether these were free workers being paid the high wages characteristic of fortification laborers in the deep South or skilled slaves is unknown. In other parts of the South, slaves were used as unskilled labor for fortification construction (Bright 1958:69).

A Congressional document of the early 1840s reveals that because of working conditions in the lower South, unskilled and skilled labor working on United States fortifications in Louisiana were paid significantly higher wages than in the upper South or the North. Carpenters working on fortifications in Louisiana received \$78.00 per month compared to \$27.50 in New York. Stone cutters and masons received \$70.00 per month in Louisiana compared to \$24.00 per month in New York (Bright 1958:69). By 1830, the aggregate cost for constructing Battery Bienvenue was \$96,447.80 (U.S. Government 1860:304-305).

Numerous alterations and repairs were required at Battery Bienvenue throughout its antebellum history. Its configuration in 1827 is shown in the plan shown in Figure 17. An oven for heating cannon shot was constructed in 1835 (Casey 1983:25). In 1839, Chase reported that

The Battery Bienvenue having been left without any person to take care of it, the Quarters and cisterns have received much injury. The Parapets of the Battery will require some additional embankments of the Earth. The Magazine requires repairs and also the Ammunition and Provision stores. Stone Traverses for eight guns and Beds for two mortars must be constructed (Chase cited in Greene 1982:270).

In 1842, the U.S. government established a military reservation comprising all public lands within a radius of 1200 yards of the Battery. On June 1, 1846, the State of Louisiana ceded jurisdiction over the tract to the U.S. government (Greene 1982:270).

In 1843, the top of the scarp wall was levelled and the thickness of the parapet reduced; the earth removed was then used to raise the parade ground. This had the

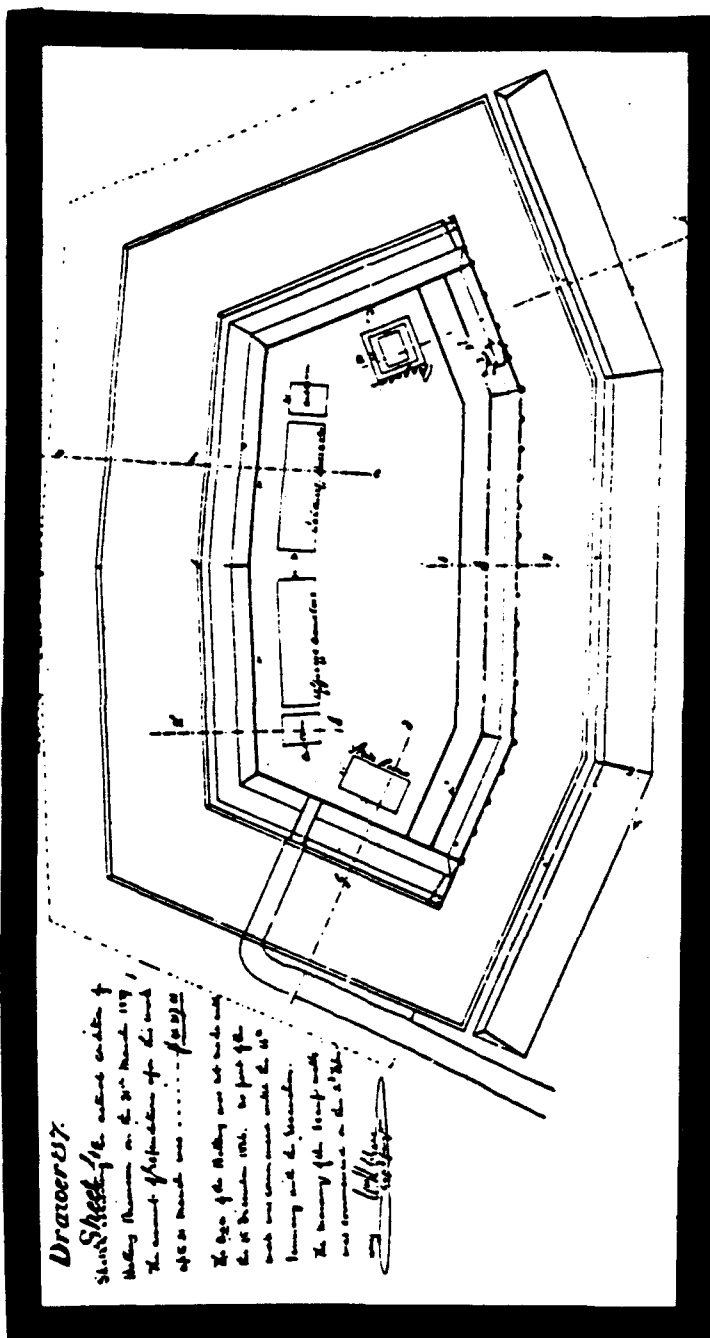


Figure 17. Excerpt from an 1827 plan of Battery Bienvenue as reproduced in Greene (1982:551).

result of causing rainwater to run from the parade into the quarters and shot furnace. Other work undertaken was the revetment of the interior slope of the parapet with timber, the laying of wooden gun traverses, and the closing of the gorge at the rear of the work with a palisade (Greene 1982:270-271).

By 1847, the barracks, quarters, and storehouse had subsided to such an extent that the floors had to be replaced and the walls raised. The ditch surrounding the Battery was widened to 60 feet and deepened to five feet on the water fronts and three feet on the land fronts (Casey 1982:25). In 1848, a Captain Barnard reported that

All the walls of officer's quarters and store-rooms were furred and plastered. New brass locks were put upon all the doors. The gable ends of the barracks were anchored to the rafters to prevent their springing off and the backs of the fire-walls cemented to slates, to prevent leaks (Barnard cited in Greene 1982:271).

General J.G. Totten reported in 1851 that construction and repair to Battery Bienvenue had cost \$129,571, four times the cost of Tower Dupre. The Battery at this time had ten 24-pounders, three 12-pounders, and two 8-inch heavy howitzers (Totten 1851:96-97). Tin gutters were installed on the buildings in 1853, but the following year an inspector noted that "they have not been painted and will ere long be corroded through with rust" (Greene 1982:272) and that most of the palisades had rotted. In 1858, platforms were constructed to receive two 8-inch Columbiad cannon, but there is no evidence that the larger guns were ever installed (Casey 1983:25).

In 1859, it was reported that the work was in poor condition and that the powder magazine had been damaged by lightning. A heavy storm in August, 1860, blew down much of the fence on the west and southwest sides of the work and caused the cannon on the southeast side to lean severely. The bridge over the moat was damaged and part of the parapet destroyed. The fort keeper reported that the Bayou surrounding the Battery had filled with sand to such an extent that at low water he could not approach the work "even with a pirogue" (Greene 1982:272).

At the outbreak of the Civil War, the Battery had thirteen barbette guns in place (Stewart 1903:763) but it apparently had no garrison or only an insignificant number of troops. Late in 1861, the fort was occupied by Confederate forces. Initially, these were units of the 1st Regular Regiment of Infantry, then Rabenhorst's Company of Black Yagers (sic), and Robertson's Company of Marion Guards. The Battery was abandoned by Confederate forces after the fall of New Orleans in April 1862 (Casey 1983:26).

Battery Bienvenue was reoccupied by Federal troops and a small contingent was kept there for the remainder of the war. The garrison at the Battery consisted first of a detachment of the First Infantry Regiment, Corps d'Afrique, reorganized as part of the Twentieth Regiment, Corps d'Afrique in August, 1863. Subsequently, the battery was garrisoned by Company G, 91st U.S. Infantry through the first half of 1864, relieved in May by Company K. In August of that year a lieutenant and 44 men of Company D, 74th U.S. Colored Infantry were stationed at the post (Greene 1982:273).

The post was ordered evacuated on May 22, 1865 (Casey 1983:26), but in November, 1865, a detachment of Company M, 10th U.S. Colored Artillery (Heavy) was assigned to Battery Bienvenue (Greene 1982:273). Apparently the Federals had changed the armament of the Battery, as a plan dated June 30, 1869 (Figure 18) shows one 32-pounder, two 24-pounders, and four 42-pounders dismounted on the main ramparts, and an 8-pounder howitzer on a naval carriage at the rear of the works (Casey 1983:26).

In December 1869, Ordnance Sergeant William Daniels reported that the Battery had been vandalized:

The wooden revetment of the interior slope of the parapet has been entirely destroyed by fire, four of the chassis have been nearly burned through at the front transom; the stockade, with the exception of but a few yards has been burned down and partly cut up. The Magazine has been badly damaged by bricks being torn from the side of the door to allow the removal of the hinges, all the windows, locks and pumps, have been taken away and a great amount of smaller damage that cannot be here particularized has been done to the work (Daniels cited in Greene 1982:274).

Scale in = 60 feet.



Figure 18. Excerpt from an 1869 plan of Battery Bienvenue as reproduced in Greene (1982:555).

Some maintenance work was conducted on the battery in the 1870s, but in 1877 an inspecting officer described the condition of the post:

This work has no armament [mounted]; the parade is flooded by high tide and storms; what remains of the buildings will stand, it is thought, for years without material injury and the cost of caring for the work seems greater than warranted by its present value (Greene 1982:275).

In 1877, the War Department recommended that the Battery be sold (Robinson 1977:61). It was not sold, however, and Battery Bienvenue continued to appear in annual Ordnance Department reports. It was not reoccupied by troops. An Ordnance Department report of 1892 shows seven guns at the Battery. In 1899, there was one 24-pounder, four heavy 24-pounders, and one 32-pounder at the Battery. These cannon were apparently the six remaining at the site in 1957, dated on their trunnions from 1832 to 1859 (Casey 1983:26).

A district engineer described the condition of Battery Bienvenue in a report of August 14, 1915:

...[The Battery is] an open work, a "pan coupe" of about 600 feet length of trace, the capital pointing down the straight reach of Bayou Bienvenue just below its junction with Bayou Maxant. The work is surrounded by a moat which connects with Bayou Bienvenu. The water in the moat is 4 or 5 feet deep -- walls 2 1/2 feet thick above the water are of brick. The gorge is closed by four brick buildings, apparently a magazine, a barracks, a four room set of officer's quarters, and a guard house -- in a general state of dilapidation. The roof remains on the barracks but all woodwork is gone. The other buildings are crumbling. The parapet is covered with heavy undergrowth and fair-sized trees. The parade ground is overgrown with swamp grass. All the guns are dismounted (Casey 1983:26).

The United States sold the Battery and an unspecified number of acres surrounding it to Julius Szodomka on April 4, 1930 (Casey 1983:26). The Battery remains privately owned and can be reached only by boat. In 1983, Julian Fos, who had owned the Battery since the early 1960s, reported that about 45 feet of the wall

facing Bayou Villere and another 50 foot section of the top of the parapet facing Bayou Bienvenue had been lost to tides in January storms (Martin 1983).

Proctor's Landing (Fort Proctor). Other fortifications were constructed or improved in the antebellum period to protect strategic approaches to New Orleans. East of Proctor Point on the southern shore of Lake Borgne, Proctor's Landing was recommended as a place for fortification beginning in 1847. By the 1850s, Proctor's Landing was the terminus for the Mexican Gulf Railway and this increased concern that it might serve as an avenue of invasion of New Orleans from Lake Borgne. Consequently, in 1855 Congress appropriated \$125,000 for the purchase of the site and construction of a tower, sometimes called Fort Proctor. Plans and elevations of the fort are reproduced in Figure 19. Construction stopped in September 1858 because of a lack of funds and the fort was never completed. Nevertheless, it remains an impressive structure, in the form of a rectangular work with scarp walls originally 27 feet in height. The tower at Proctorsville was even less strategically significant than Battery Bienvenue or Tower Dupre, and during the Civil War a new battery replaced it inland near Proctorsville. After the Civil War, the work was often referred to as Fort Beauregard, as P.G.T. Beauregard had supervised engineering activities in the district at the period in which the Tower at Proctorsville was being built. The fort became privately owned after 1916. During the Second World War, an antiaircraft gun emplacement was placed in the vicinity of the antebellum Tower (Casey 1983:180).

Developments after the Civil War and during the Twentieth Century

Prior to the Civil War, St. Bernard had been an area of commercial sugar production. The war wrecked the Louisiana sugar industry and St. Bernard, like other sugar-producing parishes, was hard hit. Several of the larger plantations lay idle and others were abandoned after the war (Din 1988:118). The loss of capital as a result of the war forced many planters to sell their plantations, and many others were foreclosed. For the lesser planters and Freedmen of St. Bernard, who made up the bulk of the population, times were equally hard. As elsewhere in sugar country, some St. Bernard planters converted to rice cultivation because it was a less capital-intensive form of agriculture.

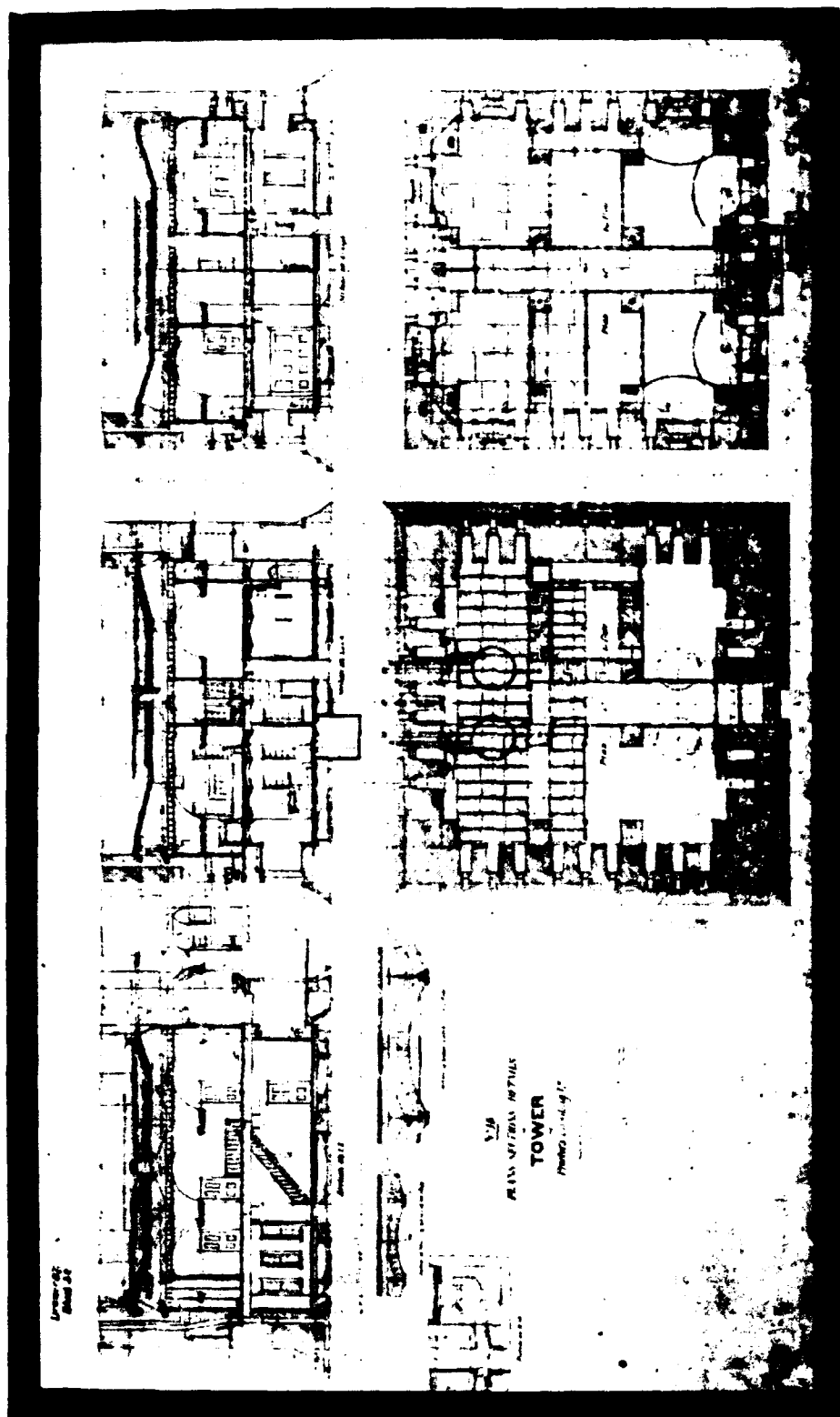


Figure 19. Plan from Drawer 87 Sheet 32 in the National Archives. The plan, as reproduced in Casey (1983:445), shows the tower at Proctor's Landing.

The Reconstruction economy of St. Bernard was not a uniformly dark picture. At Shell Beach (not to be confused with Shell Beach Bayou), on the southern shore of Lake Borgne east of Proctor Point, a hotel and 1200-foot pier extending out over the lake had been constructed by 1856. In the post-Civil War period, Shell Beach became increasingly popular, and remained a resort destination until the Second World War (Wicker et. al. 1982:78). William Harris in 1888 described Shell Beach as "one of the most beautiful seabathing resorts in the South" (Harris 1888:126).

Harris (1888) stated that the inhabitants of St. Bernard raised sugarcane, corn, rice, oranges, and some cotton of the Sea Island variety, and various vegetables for the New Orleans market. He noted that there were 20 sugar plantations in the Parish and that the Terre Aux Boeufs and Bayou La Loutre areas were divided into small farms (Harris 1888:126), much as they had been since the arrival of the Isleños in the 1770s. In 1890, St. Bernard had 4,907 acres in pasture or meadow, 2,750 acres in sugar cane, 5,000 acres in rice, 2,000 acres in corn, 1,700 acres in potatoes, 1,400 acres in hay, only 230 acres in cotton, and 2,127 in other crops (Claitors Publishing Division 1975:197).

Harris (1888) mentions neither fishing nor lumbering as major activities in St. Bernard Parish. Much of the best cypress in the area had already been harvested by 1890, but the following decade was one of growth for the lumbering industry in St. Bernard. This was partly due to developments in the extraction and transportation of logs from the cypress swamps. Railroad logging spurs were constructed on several plantations in St. Bernard (Smith 1989:54) including those inland from the study area (Wicker et. al. 1982:72-73). In 1904, St. Bernard was described by the Louisiana State Board of Agriculture and Immigration:

Sugar is the chief crop product; but rice, jute and the garden and truck varieties are extensively raised and shipped. The fruits and nuts are oranges, lemons, mandarins, figs, pecans, bananas, grapes, guavas, olives, and prunes. Some few cattle and hogs are raised here. Game consists of becasine, snipe, rice birds, papabots, wild ducks, coons, opossums, squirrels, rabbits, and deer. Fish of fine quality are plentiful; oysters, crabs, and terrapin are also found. The timber is oak, cypress, willow, elm, pine, and gum. There is

a small quantity of United States Government land in the Parish, and a very large area of Levee Board lands. Lands are worth from \$1.00 to \$60.00 per acre (LA State Board of Agric. 1904:75-76)

Transportation resources improved in St. Bernard during the late nineteenth century. The Mississippi, Terre aux Boeuf (sic), and Lake Railroad Company maintained a line from New Orleans to Proctorville by which agricultural produce was shipped to New Orleans and resort patrons travelled to Shell Beach. The line was abandoned before 1940 (Wicker et. al. 1982:78).

During the Reconstruction period, a project was initiated to construct a canal connecting the Mississippi River with Lake Borgne. In 1871, the project became tainted with scandal and accusations of fraud (Bolding 1969:51). However, by 1874 a portion of the Ship Canal from the Mississippi River to Lake Borgne through Bayou Dupre was completed. The bayou was widened and straightened for much of its length to allow the passage of vessels drawing up to four feet of water (Greene 1982:281).

In 1886, the Violet Canal was constructed along the old Phillipon Plantation canal and Bayou Dupre. The St. Louis, New Orleans, and Ocean Canal and Transportation Company built a lock 20 feet wide on the canal, which was funded by a grant from the State of Louisiana. The channel could not be kept clear and was abandoned before 1900. In that year the Lake Borgne Canal Company assumed ownership of the canal and enlarged it. Several industries grew up on the canal in the first two decades of the twentieth century until the 1923 completion of the Inner Harbor Navigation Canal which brought about a decline in activity on the Lake Borgne Canal. By 1947, the canal was no longer in use (Smith 1989:55). During the late 1950s, the Mississippi River Gulf Outlet was constructed through St. Bernard Parish in order to provide a shorter route from the Inner Harbor Navigation Canal to the Gulf of Mexico. However, industry failed to develop along the banks of the outlet.

Since the early twentieth century, the economy of St. Bernard has greatly diversified, becoming a mixture of industrial and agricultural activity with much residential development as part of greater New Orleans. Despite these changes, the southern shore of Lake Borgne has retained its character as a recreational site and commercial fishing ground.

CHAPTER 6

PREVIOUS INVESTIGATIONS

Wiseman et al. (1979:4/1-4/17) provide a detailed history of archeological investigations in St. Bernard Parish. The first systematic examination of prehistoric sites there was by Fred Kniffen (1936), who was a geographer affiliated with the Louisiana Geological Survey. Based on ceramic assemblages from the various sites, he identified a Bayou Cutler and a Bayou Petre complex. He surmised correctly that Bayou Cutler was the earlier of the two (Kniffen 1936:407-422).

Bayou Cutler is now considered to represent an early phase in the Coles Creek period while Bayou Petre represents a late prehistoric phase of the Mississippi period in the Delta region (Wiseman et al. 1979:4/5). Kniffen noted (1936:416) that at the time of his writing, a Marksville pottery complex was considered to be the earliest in Louisiana, and that he had recorded no sites representing that complex in St. Bernard Parish. Kniffen's (1936) Figure 36 indicates that he did not visit any of the sites in the present study area.

McIntire (1958) was the next individual to visit a large number of sites in St. Bernard Parish. He did so as part of an effort to date delta lobes and channels in south Louisiana. McIntire identified earlier sites than had Kniffen. These included sites now assigned to the Tchula and Marksville periods (Wiseman et al. 1979:4/8-4/9).

McIntire's (1958) maps of site locations show that he visited the area where 16SB39, 16SB40, and 16SB71 are located. His Plate 2 actually shows three sites in the approximately correct location. One of these was a beach deposit and two were shell middens. It seems probable that the beach deposit is 16SB71, while the two shell middens represent 16SB39 and 16SB40. On a different map, McIntire (1958) indicates that one of these sites had an initial occupation during the Marksville period. At the same location, McIntire indicates that there was a Plaquemine period occupation.

McIntire's (1958) Plate 12 shows only a single site (number 40, corresponding to 16SB40), and he indicates that the initial occupation there was during the Marksville period. Plate 13 of McIntire's (1958) opus indicates that he collected "Moundville Type," "Pensacola Incised," and "Marksville Incised" ceramics

at 16SB40. The former two types would represent his Plaquemine period component.

Neuman (1977) visited many of the sites reported by Kniffen and McIntire. He made new collections and also re-examined some of the previously collected material (Wiseman et al. 1979:4/13). Wiseman et al. (1979) systematically surveyed the banks of the Mississippi River Gulf Outlet and some of the surrounding area during the late 1970s. They visited 16SB39, 16SB40, and 16SB71 and provided more detailed information about the sites than had been available previously. Their data and conclusions are summarized in the chapters focused on each of those sites.

Wicker et al. (1982) of Coastal Environments, Inc., prepared a wetlands management summary for the St. Bernard Parish Police Jury. They identified known and potential resources in the vicinity of Bayou Bienvenue and Proctor Point. The Phase 2 survey area for the present report was included within the study area of Wicker et al. (1982). Their report was based on previously published sources and interpretation of maps and aerial photographs. No archeological field work was conducted in the course of their project.

CHAPTER 7 SURVEY METHODS

Introduction

The cultural resources survey of the MRGO disposal areas employed a variety of field strategies. The selection of survey methodology was to a large extent dictated by the logistical difficulties of fieldwork in the marsh environment. Extensive sections of the project area are permanently inundated and therefore cannot be covered by terrestrial survey; only boat survey was feasible in these otherwise inaccessible areas.

Boat survey supplemented by auger testing was conducted in most of the project area. The crew conducted a visual inspection of all bankline areas, both natural and artificial. These included bayou banklines, a portion of the southern shore of Lake Borgne, navigation and pipeline canals, and well-head access canals. This bankline inspection was supplemented by auger tests to a depth of two meters. Three different intervals of auger testing were employed: judgmental, systematic 200 m intervals, and systematic 50 m intervals. Tests were placed judgmentally in low probability areas (e.g., the marshland channels connecting Mosquito Bayou to Shell Beach Bayou, the Mississippi River Gulf Outlet, and other artificial waterways). In low probability segments auger tests were placed at shell exposures, elevated terrain features, and higher probability locales such as channel confluences. The systematic 200 m interval was employed in areas where it was thought possible but not probable that natural levee soils might be encountered (e.g., Bayou Mercier, below). The 50 m interval was applied in areas where natural levee soils were known to exist and/or where sites had been previously reported (e.g. Shell Beach Bayou). The various areas are delineated in Figures 1 and 2.

Phase 1 Survey

Phase 1 of the fieldwork constituted coverage of the eastern disposal area only (Figure 1). Archeological survey was conducted along two dead-end wellhead canals which extend east and northeast from Bayou Pointe-en-Pointe towards the western shore of Lake Athanasio. Fieldwork along these two canals (which will be plugged with spoil) involved visual inspection of the bankline and judgmentally placed shovel and auger tests.

No elevated terrain features were present along the canals. The only shell concentrations noted near these canals were modern deposits of dredged oyster or mixed oyster and *Rangia* shells placed at pipeline crossings and at openings between the canals and adjacent lakes. Auger tests at the intersection of the canals with the bayou channel did not yield buried cultural material. No evidence of archeological sites were recovered in this spoil disposal area.

Following this phase of the survey, the field crew briefly visited the Mulatto Bayou site (16SB12, formerly known as Lone Oak Mound) and the Lake of Second Trees I site (16SB29, formerly known as the Yucca Mound site). Neither is located within the spoil disposal area. The crew was unable to find any archeological remains on the exposed natural levees in the vicinity of 16SB12. A submerged "shell reef" lies between Lake Machais and the old course of Mulatto Bayou according to Kurt Guerna, the boat operator and lifetime resident of Hopedale. The shell reef corresponds to the original location of site 16SB12. Several sherds and bone fragments were noted in a small area of wave-washed *Rangia* around a natural gas wellhead platform. The edges of the bank drop off abruptly from the wellhead in the center of the reef. The remainder of the area is leased for oyster harvesting.

At the shell mounds which constitute 16SB29, no signs of modern disturbance were observed. A small number of prehistoric and historic sherds were noted on the surface of the mounds. The historic ceramics were coarse earthenwares found on Mound A, the southernmost mound. A grooved brick fragment also was noted near the foot of Mound A. Kurt Guerna identified it as a net weight used by gar fishermen from Marksville, who formerly camped here seasonally.

Phase 2 Survey

Overview of Phase 2. Phase 2 of the fieldwork constituted coverage of the western disposal area adjacent to and near Lake Borgne. Bankline inspection with auger tests at 200 m intervals was conducted along the banks of Bayou Mercier (two discrete segments of the bayou east of modern pipeline canals) and the eastern bank of Bayou Bienvenue. A review of geomorphological data prior to fieldwork suggested that the natural levees along these waterways might be deeply subsided. These sections, therefore, were considered to represent

moderate probability areas despite the absence of previously recorded sites along these bankline segments.

Bankline inspection with auger tests at 50 m intervals was conducted along the banks of Shell Beach Bayou and Bayou Pollett. One large prehistoric site, 16SB39, had been previously recorded on Shell Beach Bayou at its confluence with an unnamed channel now infilled. The nearby site 16SB40 is on Lake Borgne at the present mouth of the infilled bayou. In areas where Shell Beach Bayou is infilled, pedestrian survey with auger tests at 50 m intervals was implemented to obtain consistent coverage.

No previously recorded sites were present on Bayou Pollett, but that bayou formerly flowed into Bayou Dupre in the vicinity of site 16SB71, an extensive scatter of historic and prehistoric material near Martello Castle. Because of these previously recorded sites, the banklines of Shell Beach Bayou and Bayou Pollett were identified as high probability areas.

Pedestrian survey was conducted along approximately 2 km of lakeshore, eastward from the former mouth of Bayou Dupre (now a broad channel between MRGO and Lake Borgne) to an extensive beach ridge shell bank a short distance east of 16SB39. Shovel tests 30 x 30 cm in the horizontal plane were dug to a depth of 50 cm, or to clearly sterile subsoil, at intervals of 50 m. The soil from these shovel tests was screened through 1/4-inch wire mesh. The only surface area which could be traversed on foot was a narrow strip of beach ridge, and the adjacent beach at low tide, along the lake. This strip of higher ground between the lake and marshland was nowhere wider than 20 m and generally was less than 10 m wide. Only a single transect parallel to the meandering shoreline was feasible in this area. The shovel tests were supplemented by auger tests at artifact concentrations. This area includes the lakeshore artifact scatters comprising sites 16SB71, most of 16SB40, and 16SB148. Shovel Tests (ST) 1-26 were excavated within 16SB71, and ST27 was in a broad, marshy channel. ST28-ST42 were within 16SB40. ST43-45 adjoin 16SB148.

Bankline survey was conducted along the lakeshore southeast of Martello Channel. This survey area began immediately east of 16SB40. The shoreline from Martello Channel east to the bayou channel at 16SB40 exhibits easily recognizable beach ridge with frequent exposures of shell. The ridge reaches a height of over one meter

at 16SB40. The lakeshore east of the infilled bayou channel has an intermittently identifiable beach ridge with sparse and widely separated shell exposures. The shell exposures east of 16SB40 are predominantly *Rangia* but also contain oyster and small amounts of *Tagelus* (stout razor clam). In this area, the field crew navigated slowly eastward along the shore, pulling in to the beach whenever *Rangia* was present. Any historic or prehistoric artifacts (not including bricks or other structural debris) were collected from the surface, and auger tests were placed at the densest concentrations of material.

Initially, all cultural occurrences were flagged. Following this, auger tests were excavated and a sketch map was prepared of the shoreline locales. Results of field work in this area are presented in the context of the chapter dealing with 16SB148.

Bankline survey of the lakeshore also was conducted northwest of Martello Channel. No cultural remains or shell deposits were present on the shoreline between Martello Channel (the former mouth of Bayou Dupre) and the mouth of Bayou Bienvenue, the western limit of the project area. This shoreline exhibits only slight beach ridge development, in contrast to the lakeshore east of Martello Channel. The difference in the two shore areas probably is due to the presence of extensive natural levee deposition to the east. The lakeshore from the mouth of Bayou Dupre east about 1 mile (roughly to the location of 16SB40) was described as a large shell bank ("grand banc de coquille") on an 1810 map of the region (Figure 20). The same map notes a cheniere inland from the shellbank, probably referring to the tree-covered course of Shell Beach Bayou in the vicinity of 16SB39. The "shell bank" reflects the deposition of shell on the lakeside flank of the peaty clay soil zone. The concentrations of *Rangia* are associated with the higher and better defined beach ridges on firmer terrain east of Martello Channel and are absent from the peaty marsh soils forming the shoreline between Martello Channel and Bayou Bienvenue.

Bankline reconnaissance along the north bank of the MRGO channel east of the Martello Channel was also conducted. Several auger tests at more elevated bankline locales or along minor channels intersecting the MRGO channel were negative. Small amounts of modern refuse were observed along the channel, and several concentrations of shell were noted along the bankline. All of these were predominantly oyster shell, with some

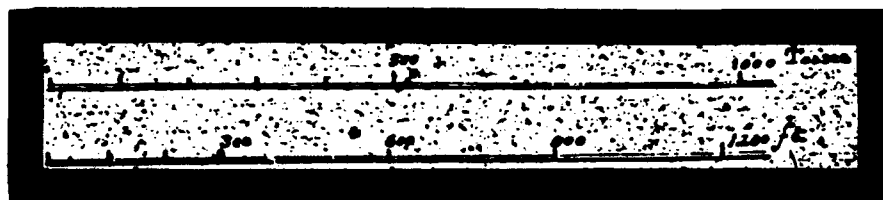
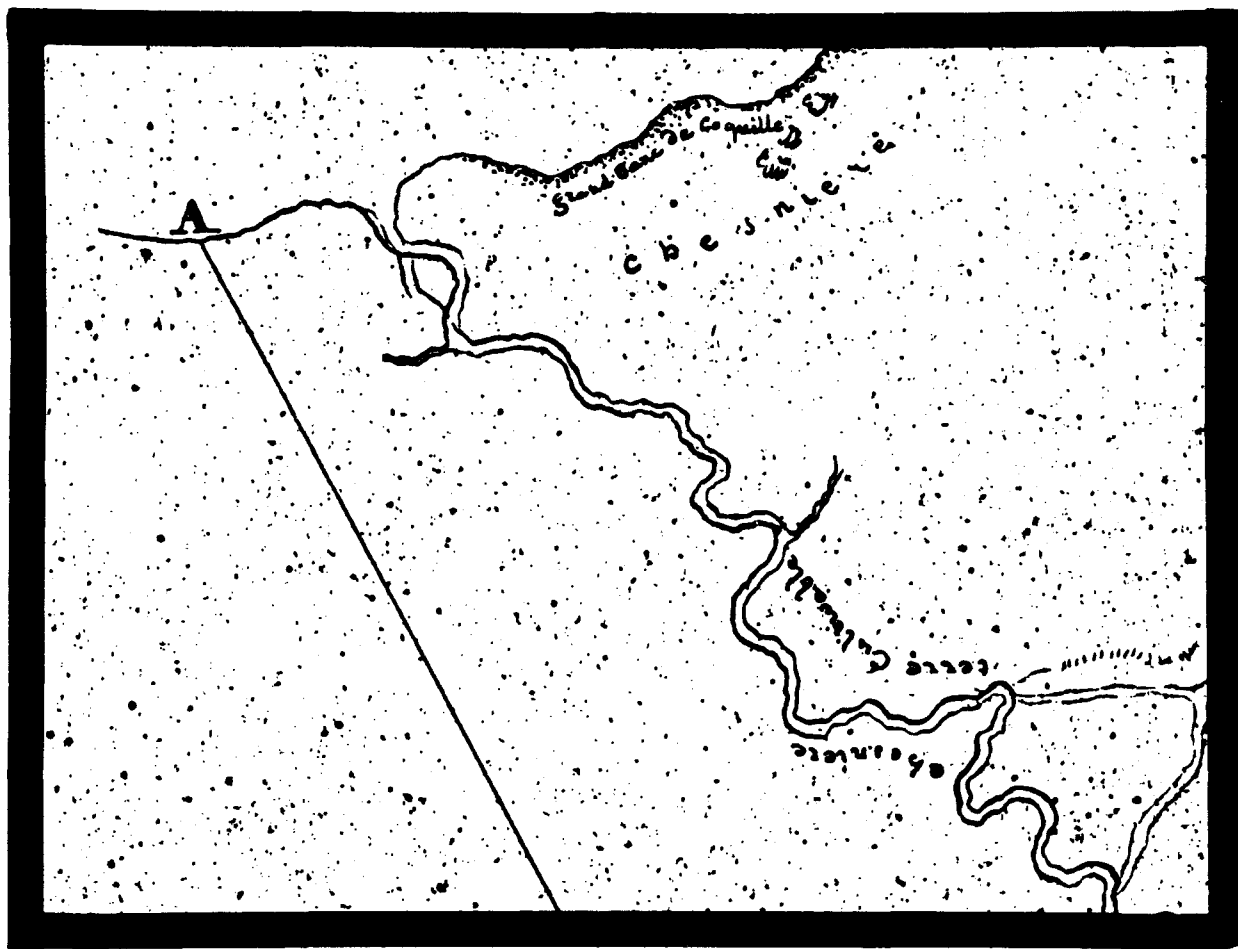


Figure 20. Excerpt from the 1810 "Map of Phillipon's Plantation" by Tanesse.

Rangia present. These "oyster dumps" reflect modern activity along the ship channel.

Bankline reconnaissance of the pipeline canals defining the western boundary of the project area was also conducted. Wooden barriers cross the canal a short distance north and south of its intersection with a discrete segment of Bayou Mercier northwest of the Bayou Chaperon/Mercier course. This northern segment of Bayou Mercier is east of Bayou Ducros, shown as Bayou Jumonville on La Tour's 1816 map (Wiseman et al. 1979: Figure 3-2). Reconnaissance of the pipeline canal bank was negative.

Bankline reconnaissance was also conducted along marshland channels roughly parallel to the southeastern boundary of the project area in T135, R14E, unassigned section. That waterway is designated Shell Beach Bayou on the project plans and maps but the usage does not correspond to earlier nomenclature. Older maps employ the name "Shell Beach Bayou" solely for the deeply entrenched course in Section 78. The field crew also followed a connecting marshland channel westward to its confluence with Shell Beach Bayou at the bayou's eastern bend. A distributary channel formerly flowed eastward through Section 78 from this bend in Shell Beach Bayou to the head of Mosquito Bayou. This channel has now widened into a network of lagoons, due to subsidence and the severing of runoff discharge through Shell Beach Bayou by the dredging of MRGO channel. Reconnaissance of the interconnecting channels west of Shell Beach Bayou was negative. No elevated terrain was observed in this area.

Bankline survey of the south bank of Bayou Bienvenue was supplemented with auger tests at 200 m intervals. A total of 19 auger tests were placed along the bankline. Auger Test 4, about 700 m from the mouth of the bayou, encountered silty loam to 20 cm and stiff clay from 20 to 90 cm; below 90 cm the wet soil was so loose that it fell from the auger bucket during extraction. The peaty marsh soil along the bankline was so loose that all other auger tests here quickly reached 200 cm, without yielding solid cores. The natural levee along Bayou Bienvenue is so deeply subsided that it cannot be sampled by hand augering. The bankline now supports only a narrow fringe of light brush. The depiction of a group of trees farther upstream in an 1840s map, approximately at the AT14 position, led one recent study to suggest the area might represent a prehistoric site (Wicker et al. 1982: Figure 2-50).

However, no trees or elevated terrain now survive in this area, and no evidence for a site was recorded in the auger test.

Bankline survey with auger testing at 200 m intervals was conducted along Bayou Mercier. Five auger tests were excavated on the south bank between the bayou's intersection with the canal and the eastern end of the clearly defined bayou channel in T125, R13E, Section 26. From there, one relict channel formerly extended northeast towards the lakeshore in Section 25, but its lower course now is infilled. Another relict channel extended south into Section 35, eventually joining the present lower course of Bayou Mercier, but the channel broadened into a series of marshland lagoons due to subsidence. Four additional auger tests were placed on the north side of Bayou Mercier. The loose marsh soil fell from the auger bucket in all of these tests. No levee soil deposition was recognizable along the upper course of Bayou Mercier.

Bankline survey was also conducted along the lower course of Bayou Mercier. Auger testing began on the west bank of the bayou, at its mouth. The second and third auger tests were placed on the northern and southern flanks of a cluster of yucca plants on the brush-covered bankside, about 350 m upstream from the mouth of the bayou. Yucca frequently grows on shell piles or calcium rich structural debris at sites in southern Louisiana, but no such material was observed at this location. The fourth auger test, about 600 m south of the lake, was about 10 m south of weathered vertical wood posts by the bankline. These probably pertain to an abandoned campsite, but no artifacts were noted on the surface here. No building is depicted at this location on the 1942 USGS quadrangle showing the area, but a structure is depicted here on a 1951 aerial photograph. Auger Tests 1-3 encountered silty loam or silty clay loam to a depth of 90-110 cm, below which was stiff clay (the levee soils deposited along Bayou Mercier). Auger Test 4 yielded silty loam and silty clay loam to 70 cm, below which the loose marsh soil fell from the auger.

Farther upstream, beginning about 780 m south of the lake, the bayou channel now is infilled as far as the pipeline canal parallel to the MRGO channel, although the bayou channel remains open from there to the ship channel. A marshland channel leads northwest from Bayou Mercier at its silted-in end to a network of marsh lagoons. The channel entering Bayou Mercier is

shown as a narrow trenasse in 1951 aerial photographs. The lower course of Bayou Mercier, which enters Lake Borgne in T12S, R13E, Section 36, was designated Bayou Chaperon in an 1829-1831 township plat (Wiseman et al. 1979: Figure 3-3) and an 1874 geological survey map (Hilgard and Hopkins 1878). This same waterway was named Bayou Chabert on LaTour's 1816 map of the region (Wiseman et al. 1979: Figure 3-2). The upper and lower courses of Bayou Mercier (that east of Bayou Ducros and the outlet of Bayou Chaperon) were linked by a meandering channel prior to the dredging of the Mississippi River Gulf Outlet channel, but that connection may be geologically recent. Only along the lower course of Bayou Chaperon/Mercier is there a significant natural levee.

Survey of the east bank of Bayou Mercier began with an auger test about 750 m south of the lake. This test, about 10 m south of a cement slab foundation exposed on the bankline, yielded silty loam to a depth of 80 cm and stiff clay below that. Four additional auger tests placed northward along the bankline were in loose marsh soil that fell from the auger.

Bankline survey with auger testing at 50 m intervals was conducted along the courses of Shell Beach Bayou and Bayou Pollett. Part of the survey along Shell Beach Bayou was conducted via boat. However, portions of the bayou are silted in so that pedestrian survey was necessary to provide complete coverage.

A total of 21 auger tests were placed on the south bank of Shell Beach Bayou between the eastern bend in the bayou and its silted-in end east of 16SB39. In most of these, silty clay was encountered at depths ranging from 10 to 85 cm below surface and was underlain by stiff clay. The general stratigraphy appears to reflect a higher natural levee surface farther west on Shell Beach Bayou, perhaps suggesting that the channel discharge originally flowed eastward along this arm.

Eighteen auger tests were excavated on the north bank of this arm of the bayou. Soils were variable. Two tests located approximately 300-350 m east of the silted-in end of the bayou, yielded firm gray clay at 140 cm. The auger tests eastward to the channel confluence revealed silty clay loams, but the loose wet soil usually fell from the auger.

Auger tests were also excavated on the northwest and southeast banks of Shell Beach Bayou between its

eastern bend and the MRGO canal. Numerous channels led away from the bayou into the marsh, making the auger test placement somewhat irregular. Several of the 18 auger test points on the northwest bank were within inundated terrain. All tests on both banks yielded silty clay loam below loose organics-rich silt. No stiff clay was recorded along this segment. On the west side of the bayou, about 450 m southwest of the bend, a broad channel leads north into a marsh lagoon. Three wooden posts protrude from the entrance to this channel, perhaps the remains of a control gate. These posts probably are modern, but it was impossible to date them. No structure is visible at this location in 1945 and 1951 aerial photographs. No historic cultural remains were identified on this section of the bayou. No locale number was assigned to the three posts.

Six auger tests were placed on the south bank of the open (navigable) western arm of Shell Beach Bayou. All of these auger tests encountered hard silty clay or clay at a depth between 20 and 45 cm, below silty clay or silty clay loam. *In situ Rangia* were encountered in two of the auger tests. This area was ultimately assigned site number 16SB140. An additional seven auger tests were executed on the north side of the open bayou. All of these tests yielded silty clays with admixtures of sand and peat-like organics. Auger Tests 12 and 13, those nearest the ship channel, contained significant proportions of sand to 80-90 cm. No stiff clay was encountered on this bank of Shell Beach Bayou. Auger tests along the banks of the infilled bayou through 16SB39 yielded no stiff clay levee soils on the north side of the old channel except at middens flanking the lateral channel to 16SB40.

Auger tests were also excavated along the south bank of the infilled section of Shell Beach Bayou between 16SB39 and the silted-in end of the bayou's eastern arm. All of these tests encountered stiff clay at about 30 cm, below silty loam. Several tests yielded a paler 2.5Y 5/1 (gray clay) at depths of 90 to 160 cm. It was not feasible to conduct auger tests along the north bank of this infilled channel section due to the southward retreat of the lakeshore, which now intersects the old channel east of 16SB39.

Bankline survey was also conducted along Bayou Pollett. This meandering marsh channel formerly drained into Bayou Dupre upstream from Martello Castle. Due to shoreline retreat, Bayou Pollett is now a tidal channel leading from MRGO directly into Lake Borgne west of

Martello Castle. The "island" separating Bayou Pollett from the MRGO canal has been reduced to a narrow crescent of land. Eleven auger tests on the south bank of the bayou yielded peat-like silty clay on silty clay loam to about 30 cm, below which the loose wet silt fell from the auger. At the northern tip of the island are the wooden structural remains of two buildings surrounded by modern refuse. These are discussed as Locale 6/19/92-2.

Six auger tests were excavated on the northern bank of the bayou. The first two of these, near the eastern end of this bank, yielded silty or sandy loams to a depth of 30 cm, below which the loose soil fell from the auger. The four additional tests yielded silty or sandy loam above stiffer silty clay to a depth of 90 cm, below which the soil fell from the auger. The absence of any solid column of levee soil suggests that Bayou Pollett does not represent an important distributary channel, but is a geologically recent waterway.

Battery Bienvenue (16SB84)

Battery Bienvenue (16SB84) was visited during fieldwork in order to prepare a site update form. The field crew photographed the site and made observations concerning its condition. However, no artifacts were collected nor were any excavations made.

Due to subsidence and erosion, it is now possible to moor beside the masonry rampart facing Bayou Bienvenue. The masonry walls are overgrown with brush. Four large cannons rest on modern cement mountings in their original gun emplacements. No cannons were present in two other gun emplacements on the ramparts. The interior grounds of the site are filled with marsh grass and are strewn with structural debris. The brick buildings depicted on historic plans of the fort largely have fallen into rubble. The walls of the southernmost building still rise 1.5 m. The northernmost building is standing, but its floor has subsided several feet below marsh level. Its roof is overgrown with vegetation. Portions of the northeastern rampart of the battery are damaged, probably due to 1983 storm damage.

Martello Castle (16SB85)

Martello Castle (Tower Dupre) was photographed during fieldwork. However, the crew did not disembark at the privately owned structure. Some damage to the northern walls (fallen masonry) was noted. The damage

probably corresponds to 1983 storm damage reported previously. Chapter 5 summarized changes made to the structure during the twentieth century.

CHAPTER 8

SITE 16SB39

"The Shell Beach Bayou Complex" of Sites

Three prehistoric sites (16SB39, 16SB40, and 16SB140) are located on Shell Beach Bayou and on an intersecting bayou channel leading to Lake Borgne (Figure 21). The close proximity of these sites, clustered around the bayou confluence, suggests that they can be grouped as a complex for interpretive purposes. The research potential of each of the sites is enhanced by the presence of the others. It is recommended that 16SB39, 16SB140, and a portion of 16SB40 be considered eligible for listing in the National Register of Historic Places. The complex and its NRHP eligibility are discussed further in Chapter 11. Chapters 8, 9, and 10 discuss each of the sites individually.

The three sites were mapped on a single grid in order to clarify their spatial relationships. A permanent datum was installed at each of the sites. These were made of cement with an embedded brass cap. The grid coordinates for these are N100 E60 (16SB40, Locus A), N0 E0 (16SB39, Midden D), and N25 W400 (16SB140). Site 16SB39 occupies the central position within the Shell Beach Bayou Site Complex, and the extent of midden there is far greater than at the other two sites.

Previous Investigations

The Site Record Form on file at the Louisiana Division of Archeology mentions a series of investigators who have visited 16SB39. McIntire in the 1950s is the first of these. Baudier, Shipman, and Edwards of the Louisiana Archeological Society are the most recent. The form indicates that six midden areas had been reported, although one of these was not relocated by Baudier's group in the 1980s. The form suggests that some disturbance may have resulted from dredging and that some of the shell middens could be spoil deposits.

Wiseman et al. (1979:Appendix) prepared a sketch map of the site showing three small middens (A, B, and F) and three larger middens (C, D, and E). The latter three are shown as linear, paralleling the south side of Shell Beach Bayou. Only small gaps separate these three

middens from one another. The site description provided by Wiseman et al. (1979) states:

Six Rangia middens. Dimensions are as follows: Midden A - 15 m x 11 m x 60 cm; Midden B - 11 m x 17 m x 60 cm; Midden C - 35 m long x 1.0 to 1.5 high; Midden D - 25 m long x 1.0 to 1.5 m high; Midden E 150 m long x 1.0 to 1.5 m high; Midden F - 6 m x 1 m x 45 cm (Wiseman et al. 1979:Appendix).

Wiseman et al. (1979:Appendix) provided the following interpretation of the site:

The very few sherds collected at 16SB39 suggest a late Marksville age for at least the main midden. Probably it was a good spot to live for a long time. Because of the extent of the site and the likelihood that much of it is still in situ (certainly Middens A and B), as well as the relatively long occupation, 16SB39 is believed to be eligible for nomination to the National Register of Historic Places (Wiseman et al.:Appendix).

Wiseman et al. (1979:5/22) collected ten sherds from 16SB39. Only two were decorated. These were classified as Marksville Incised var. Yokena and Pontchartrain Check Stamped var. Pontchartrain. Other artifacts consisted of a sandstone fragment and two pieces of bone. Wiseman et al. (1979:5/19-5/23) noted that the small number of artifacts made temporal assignment of the site problematic. However, they suggested an initial late Marksville occupation with Baytown and early Coles Creek components probably also present.

Description of the Site in 1992

Despite suggestions by previous researchers of possible dredging, 16SB39 appears to be relatively undisturbed. It is likely that previous investigators thought it possible that at one time, Middens C, D, and E (the shell piles or "linear mounds" elevated more than 1 m above the marsh) were continuous but that the continuity had been interrupted by dredging. However, 1992 excavations included two units within the gaps between these three middens. Those units demonstrated that cultural deposits are undisturbed. Thus, no disturbance appears to have occurred below the level of the base of the elevated middens.

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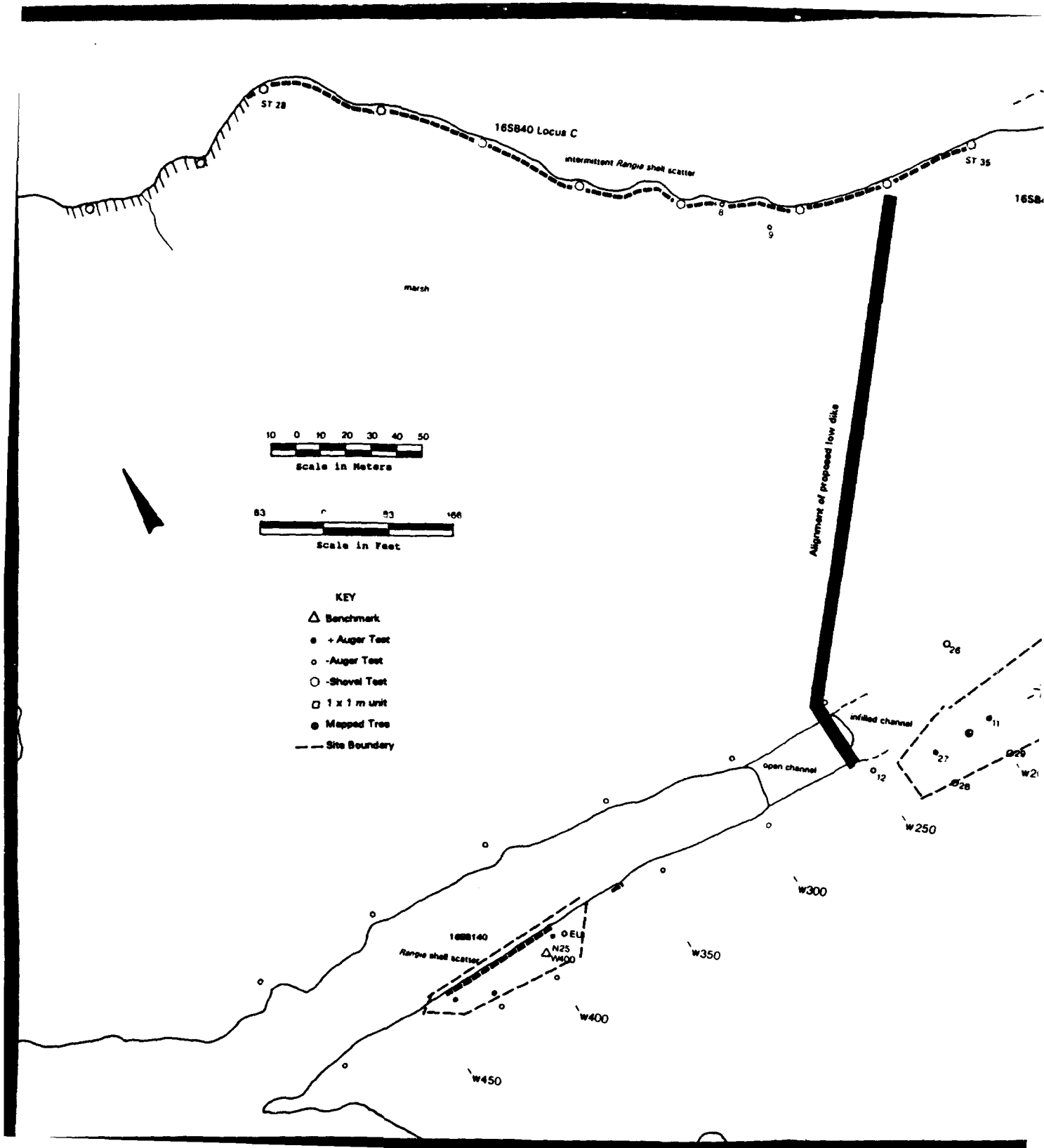
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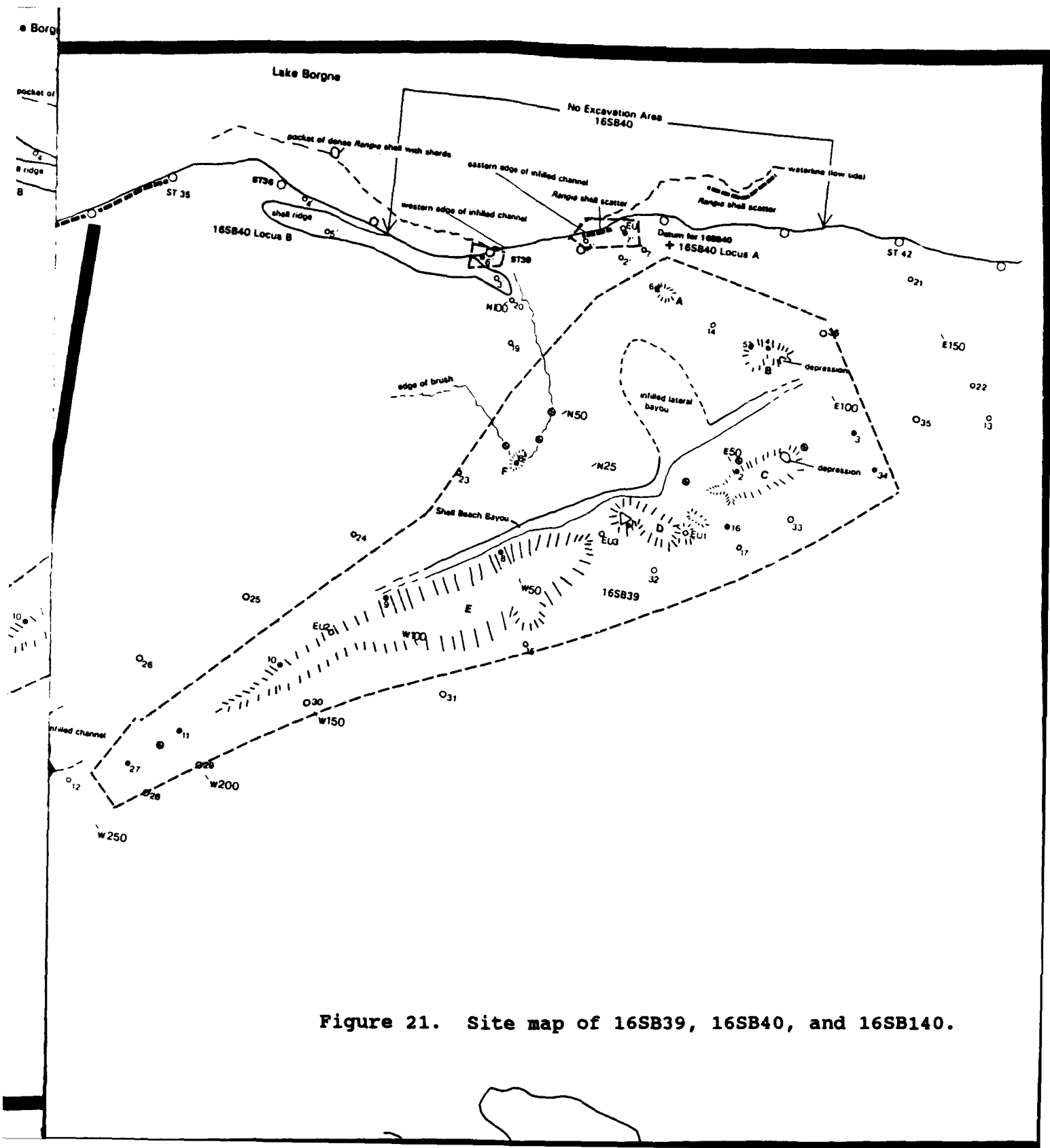


Figure 21. Site map of 16SB39, 16SB40, and 16SB140.

It should be noted, in the context of disturbance, that one of the present landowners did some "digging" on the site during his youth. This level of activity represents only a very minor impact because of the large size of 16SB39. No historic or modern material was noted at the site except for recent surficial material which has floated in or that was discarded on the higher middens. Also, few sherds or faunal remains were exposed at the surface despite the fact that artifact density was moderate in two of the three units excavated.

Six discrete midden areas (previously termed A, B, C, D, E, and F) are easily recognizable at the site. These middens are irregular terrain features composed largely of *Rangia* shell. They are completely covered by brush and trees. Middens C, D, and E are aligned roughly parallel to Shell Beach Bayou, and together extend about 255 m from east to west along the south bank of the bayou. A low gap separates Midden C from D and a second gap separates D from E. These gaps are each about 10 m wide. Auger test 16 (AT16) and Excavation Unit 3 (EU3) indicate that subsurface midden is present between the identified, elevated middens.

Subsurface midden was recorded on the south bank of the bayou west of Midden E at N16 W200 (AT11) and N16 W225 (AT27). Auger tests west of Midden E at N21.5 W250 (AT12) and along the open bayou bankline at approximately N25 W300 and N25 W350 were negative. Subsurface midden was recorded on the south bank of the bayou east and southeast of Midden C at S18 E100 (AT3) and S35 E100 (AT34). Auger tests east and southeast of Midden C at S25 E125 (AT35), S25 E150 (AT22), and S40 E150 (AT13) were negative. Auger tests at 50 m intervals along the south bank of the bayou eastward from AT22 were negative. The subsurface extent of midden, therefore, is continuous for a distance of more than 325 m but less than 375 m along the south bank of the bayou.

Middens C, D, and E slope steeply into the infilled channel of Shell Beach Bayou on their north side, and slope more gradually into the marshland on their south side. Negative auger tests in the marshland at N0 W225 (AT28), N0 W200 (AT29), N0 W150 (AT30), S25 W100 (AT31), S25 W60 (AT15), S25 E0 (AT32), S35 E35 (AT17), and S35 E60 (AT33) indicate that subsurface midden does not extend into the marshland far beyond the surface features. In some areas, the extent of buried midden

extends less than 10 m beyond the southern edge of the elevated shell features.

The eastern end of Midden C and the western end of Midden E slope gradually into the marsh above the subsided natural levee of Shell Beach Bayou. The trunks of dead trees extend a short distance beyond the ends of the elevated middens, marking the presence of near-surface midden or natural levee. The gaps dividing middens C, D, and E probably represent the unmodified midden surface, i.e. the surface prior to the "construction" of the elevated, linear shell features. The gaps may have been altered by storm scouring. Lake water pushed inland along the formerly open channel between 16SB40 and 16SB39 might have pressed against high middens C, D, and E and then flowed through the gaps, causing some erosion along the midden slopes.

Midden C is the easternmost of the middens in the linear group, and extends about 40 m east to west, from E75 to E35. This midden is about 15 m wide. Its maximum elevation is 1.13 m above the foot of the slope. A shallow depression is present on the northeastern slope of the midden, separated from the bayou by a low earth sill. The western end of Midden C is a steep slope of exposed *Rangia* shell. The highest point of C (S10 W45) is about 1.75 m above the bayou surface.

Midden D is the central midden in the linear group. It is located roughly opposite the center of the infilled lateral bayou leading to Lake Borgne (Figure 21). Midden D, including several low subsidiary ridges at its southeastern end, extends 35 m east-west (E30 to W5) and 17 m north-south (S22 to N5). The overall orientation of this midden is from southeast to northwest. Site datum was placed on the top of a narrow ridge at the northwestern end of the midden. The highest point of Midden D, near S2 E10, is about 1.6 m above the bayou surface. Excavation Unit 1 (EU1) at 16SB39 was placed on a low, subsidiary ridge at the southeastern end of D. The northeast corner of this 1 x 1 m unit was at S17 E19 (Figure 21).

Midden E is the westernmost of the middens at the site and extends 168 m east to west (W15 to W183). The highest point of E, near N0 W50, is about 2.17 m above the bayou surface. The midden is 20 to 35 m in width in that portion which lies approximately between W30 to W85. West of W85, Midden E narrows and slopes gradually downward. A low subsidiary lobe of the main ridge extends south into the marsh for a distance of

approximately 10 m between W48 and W62, terminating near S20 W50.

Excavation Unit 2 at 16SB39 was placed near the edge of Shell Beach Bayou on the lower, western part of Midden E. The northeastern corner of the unit was at N20 W127. Excavation Unit 3 was placed between Middens D and E. The northwestern corner of the unit was at N0 W12. The auger test placed at the bottom of this unit yielded the deepest midden material recovered at the site. It consisted of *Rangia* in silty clay with areas of concentrated ash to approximately 230 cm below the unit datum (205 cm below water level in Shell Beach Bayou).

Trees and dense brush on the south side of Shell Beach Bayou presently are confined to Middens C, D, and E at the site. Scattered trunks of dead trees nonetheless extend along the channel eastward from the eastern end of Midden C about 900 m and westward from the western end of Midden E about 250 m. Aerial photographs taken in 1945 (Figure 22) and 1951 show substantial woods in these areas. The 1964 aerial photographs display dead forests in the same areas due to saltwater intrusion. Aerial photographs taken in 1945, 1951, and 1964 show Shell Beach Bayou as an open channel at 16SB39, with the open channel extending north towards the lake at the lateral bayou to 16SB40. The infilling of these channels has occurred since the 1960s due to natural causes.

A substantial forest also occupied the west bank of the lateral bayou. In 1945, the wooded area extended north 320 m from Shell Beach Bayou (at Midden F of 16SB39) to the lakeshore (Figure 22). This forest appeared healthy in aerial photographs dated 1951 and 1964, despite some loss due to shoreline retreat. However, most of the trees are now dead. About 200 m of the wooded natural levee has been lost to lakeshore erosion. A much narrower belt of trees occupied part of the east bank of the lateral bayou. In 1945, these woods extended north 100 m from Shell Beach Bayou (at Midden B of 16SB39) through Midden A of 16SB39 and Locus A of 16SB40. Only the trees atop Middens A and B now survive. The northern end of the forest is now exposed in Lake Borgne 10-20 m north of the high tide line.

No elevated terrain features or positive auger tests were recorded along the north bank of Shell Beach Bayou except at the confluence with the lateral bayou channel to the lake (Middens B and F). The complete



Figure 22. Excerpt from a 1945 aerial photograph of Shell Beach Bayou and environs (from the files of the New Orleans District Army Corps of Engineers).



absence of dead trees and brush along the north side of Shell Beach Bayou suggests that no near-surface natural levee soils are present. The natural levee on the south bank probably is more substantial than that on the north bank. Such uneven development of bayou banks is observable on other active and relict channels in this region.

Middens A, B, and F are lower surface middens north of Shell Beach Bayou. A and B are east of and F is west of the bayou channel between Shell Beach Bayou and Lake Borgne. Middens A and B are surrounded by marsh. A few small, dead tree stumps are present between Middens A and B and extend north of Midden A into Locus A of 16SB40 and beyond that into the lake, marking the subsided eastern levee of the lateral bayou. Auger Test 36 (N25 E110) and AT21 (N25 E150) east of Midden B were negative, as was AT14 (N50 E72) between Middens A and B.

Brush and dead tree trunks extend north and northeast from Midden F into Locus B of 16SB40. The dead tree trunks extend much further into the lake along the subsided western levee of the lateral bayou. The wider and denser stand of trees above the western natural levee indicates that this side represented the more extensive of the two levees. Auger Test 19 (N85 W6) and AT20 (N100 E3) in the dead grove of trees between Midden F and Locus B of 16SB40 were negative, as were the auger tests west of Midden F along the north bank of Shell Beach Bayou. Middens B and F probably mark the eastern and western edges, respectively, of the channel confluence.

Midden A is a low, roughly circular shell midden about 8 m in diameter. The highest point of A, near the center of the midden at N72 E62, is about .4 m above the adjacent marsh surface. Auger Test 6 at the western foot of the midden (N75 E59) yielded *Rangia* from 8 to 105 cm. At that depth, the hole infilled rapidly with water and loose shell so that it was not possible to auger deeper. Midden A is only 30 m south of the high tide line on Lake Borgne, and is significantly closer to Locus A of 16SB40 than it is to Midden B of 16SB39. The designation of Midden A as part of 16SB39 presumably was based on the initial recognition of 16SB39 as an interior bankline site and 16SB40 as a lakeshore site. That distinction is based largely on the presence at 16SB40 of the shell beach ridge west of the infilled lateral bayou. Due to the extensive shoreline erosion in this area, the employment of contemporary lakeshore exposures is an arbitrary method of site definition.

Midden B extends about 18 m east-west (E95 to E77) and about 13 m north-south (N22 to N35). It is composed of an irregular grouping of ridges. The primary orientation of the midden is from southeast to northwest, and it is approximately 20 m in overall length. The highest point within B, near the center of the midden at N30 E87, is .52 cm above the adjacent marsh surface. Auger Test 5 at the foot of the midden slope (N34.4 E80.75) yielded *Rangia* at depths of 39 to 132 cm below surface.

Midden F is about 8 m long and 4 m wide, oriented northeast-southwest. The highest point of the midden, near N42 W28, is about .3 m above the adjacent marsh surface. Only a few *Rangia* are visible on the surface, at the southern end of the midden. Low brush and scattered dead trees extend north and northeast from the midden. Several large dead trees at the border of brush and marsh grass mark the edges of the subsided natural levee. Auger Test 18 in the center of Midden F (N41.5 W28) yielded *Rangia* from 14 to 60 cm below surface. Below that depth the hole filled in rapidly because of loose shell and water so that the auger test could not be continued.

Excavation Unit 1 (EU1) at 16SB39. This unit was placed on a slightly elevated, approximately circular feature between Middens C and D (Figure 21). Figure 23 is a plan view of the circular feature. The plan was made with compass and tape, and shows the spatial relationship between the feature and the unit. Datum was established in the NE corner of the unit, 10 cm above ground surface at S17 E19. Excavation proceeded in arbitrary 10 cm levels. All soil was screened through 1/4-inch mesh.

Level 1 (0-10 cm below surface) yielded aboriginal ceramics, bone, and a shell bead. Level 2 (10-20 cm below surface) also yielded ceramics, bone, and an additional shell bead. The two beads are shown in Figure 24. In Level 3 (20-30 cm below surface) larger bones were uncovered, and these appeared to be *in situ*. Excavation ceased when it became apparent to the field crew that these bones represented a human burial. In accordance with Louisiana's recently enacted legislation concerning unmarked cemeteries, excavation was then terminated.

The New Orleans District Corps of Engineers, the Louisiana Division of Archeology, and the St. Bernard

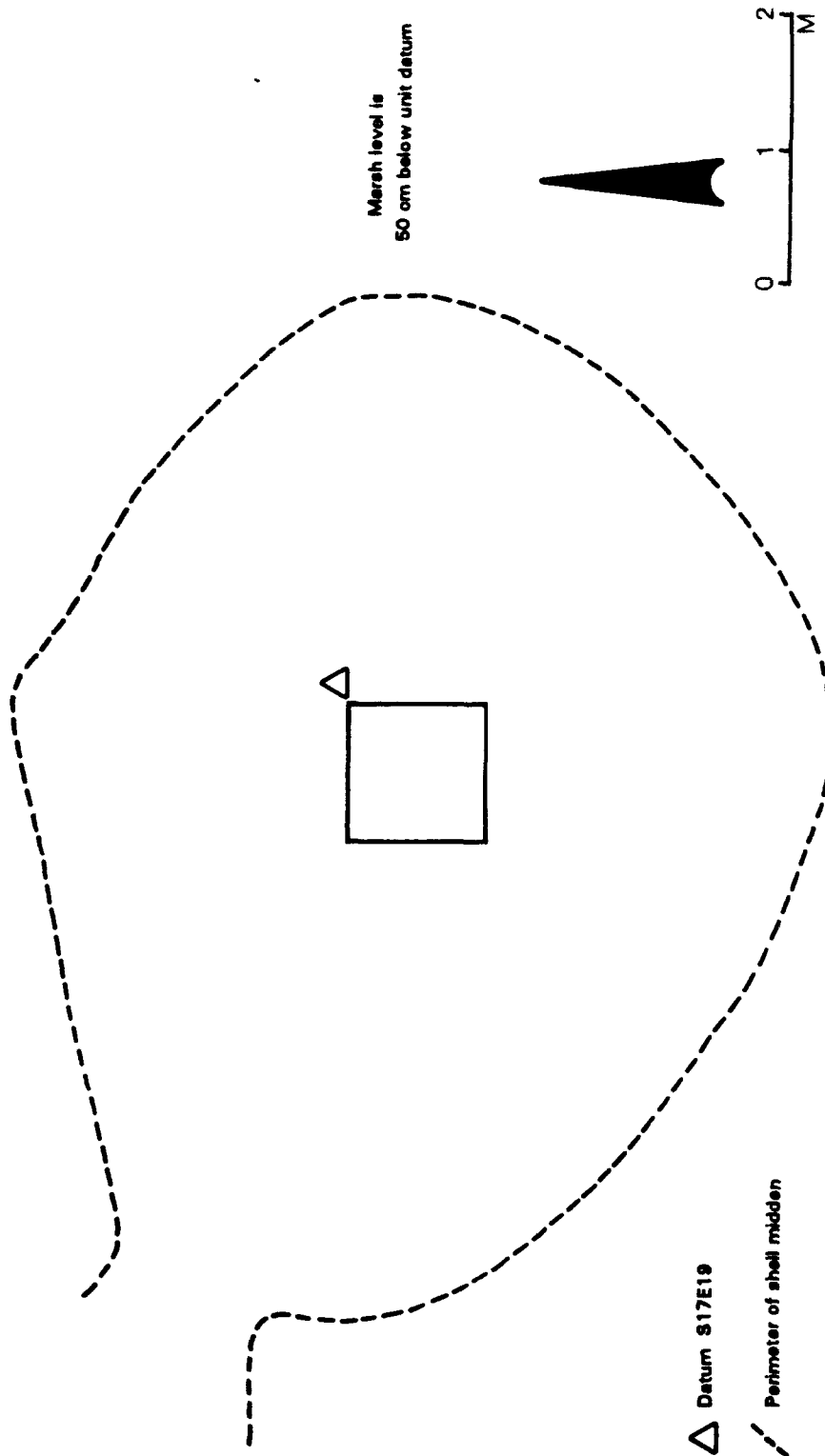


Figure 23. Plan of the feature on which Excavation Unit 1 was placed at 16SB39.

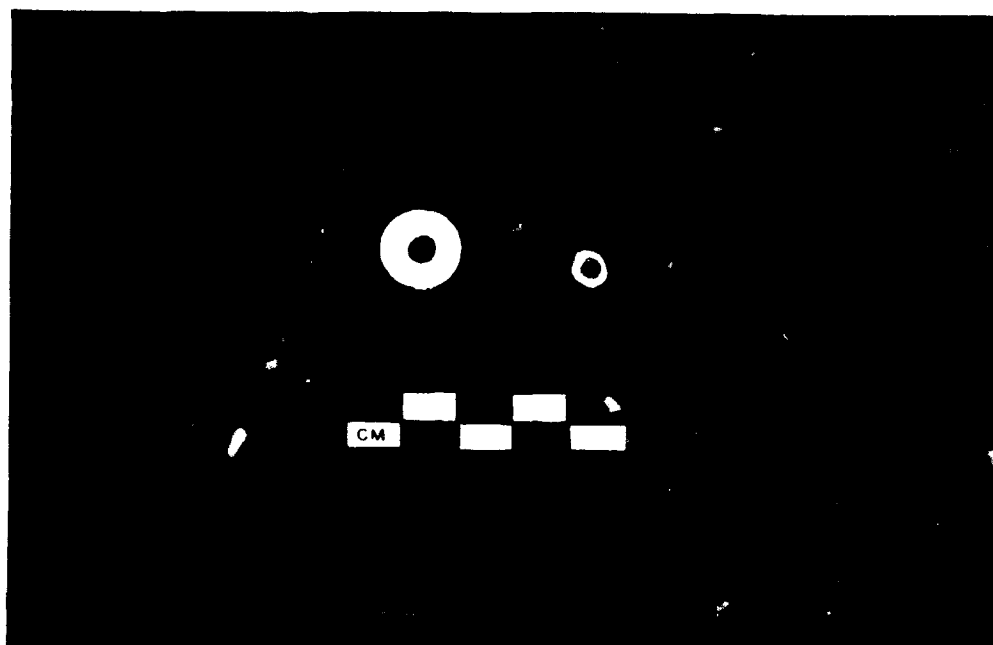


Figure 24. Photograph of beads recovered in Excavation Unit 1 at 16SB39.

Parish Sheriff's Office were notified that the burial had been uncovered. Artifacts from the unit were analyzed immediately, and an appointment was made to return to the site with a member of the Sheriff's Office. At the time of the appointment, the burial was documented without any further excavation and without moving any of the bones. Following this, two beads which were considered to be possible grave goods and all bone fragments that might have been human were placed in the floor of the unit. The unit was then backfilled, the unit datum removed, and the area of excavation covered over with shell and brush.

Figure 25 is a plan view of the excavated portion of the burial. The figure shows that the left femur and the distal portion of the right femur were exposed. Also exposed were part of the left pelvis, the proximal ends of the left and right tibias, and the right patella. Bone preservation was excellent.

The orientations of the femurs were 350° (left) and 310° (right). The distal end of the left femur appeared to be intact, but the medial epicondyle of the right femur had separated. Part of the left pelvis was also exposed. The head of the left femur was still articulated with the acetabulum. Depths of the left greater trochanter and the left lateral epicondyle were 26 and 27 cm respectively, while the depth of the head of the femur was 30 cm. This reflects the fact that the head of the femur was facing downward. Although the medial epicondyle (separated) of the right femur was only 26 cm below datum, the right femoral shaft was angling downward, from the distal to the proximal end. At the approximate mid-point of the shaft, the depth was 31 cm.

The relative positions of the pelvis, femurs, and tibias indicate that this individual was buried in an extended position. The relatively higher position of the left femur compared to that of the right, the orientation of the head of the left femur (downward) and the left acetabulum (upward), and the fact that the lateral epicondyle and greater trochanter are at shallower depths than the remainder of the femur all indicate that this individual was interred on his/her right side. The head would have been to the south, and the individual would have been facing east.

No obvious pathologies were noted. No arthritic lipping of the acetabulum was observed. All epiphyses were fused. Measurements were taken on the bones, as

allowed by the varying degree of exposure. In doing so, no further disturbance of the burial occurred. For the left femur, diameters were obtained at the neck midway between the head and the trochanters (26.8 mm), below the trochanters (21.6 mm), at the center (24.1 mm), and at the distal end proximal to the epicondyles (31.0 mm). A measurement of 30.0 mm was obtained for the diameter of the right femur at the distal end. The length of the left femur was 39 cm. The diameter of the left acetabulum was 37.5 mm. The thickness of the iliac crest was recorded as 10.2 mm. The right patella measured 34.6 x 34.5 mm, with a thickness of 18.6 mm.

Giardino (1977) presented data concerning femur length for five females and four males from the Mt. Nebo site (16MA18) on the Tensas River. Burials there were dated to the Early and Late Coles Creek period. The range of femur lengths of individuals identified as females was 30.37 to 39.28 cm. For males, the range was 40.00 to 46.00. Thus, the length of the left femur exposed in EU1 falls at the very upper end of the (skeletal) female range at Mt. Nebo.

Bass (1971), in his discussions of methods for determining sex from skeletal material, summarizes data from a number of sources. Studies of a seventeenth-century London population and of a more recent African-American population suggest that the diameter of the acetabulum recorded at 16SB39 is most likely representative of a female. Using femur length and data acquired by Trotter and Gleser (in Bass 1971:175) to estimate height, the femur length would indicate a height of 150 cm or 149 cm (approximately five feet) for a white or black female, respectively.

As was noted above, material recovered from Levels 1 through 3 of the unit was examined in the laboratory prior to re-burial. All identifiably human bone, all unidentifiable mammal bone, and possible grave goods were then bagged for reburial. Level 1 (0-10 cm below surface) yielded 16 small bone fragments which had not been recognized as being human in the field. Many of these represented cranial and mandibular fragments. These were: (1) a cranial fragment with suture; (2) a fragment of a left maxilla; (3) a fragment of a right maxilla; (4) a second fragment of a right maxilla; (5) a right temporal bone fragment; (6) a fragment of a right mandible (representing part of the lower body near the gonial angle); (7) a right mandibular fragment with the mental foramen; and (8-10) three unidentifiable cranial fragments. The remaining identifiably human bones from

Level 1 represented fragments from distal extremities: (11) the right lesser multangular (from a hand); (12) a left metacarpal; (13) a phalanx from the first row of the foot (the distal end and part of the proximal end were missing); (14) the distal end of a probable middle phalanx; (15) a fragment probably representing the left navicular of the foot; and (16) a middle phalanx from the foot.

Five human teeth and two human tooth fragments were also recovered from Level 1. The first of these was an adult molar. The root configuration indicated that it represented an upper left molar 1. Mesio-distal diameter, bucco-lingual diameter, and crown height were 11.1, 12.1, and 4.7 mm respectively. The tooth exhibited considerable wear. Enamel was present only around the periphery. Giardino (1977) constructed a figure showing the patterns of dental wear for members of the Mount Nebo (16MA18) population whose skeletal age had been determined. The pattern of wear on the molar discussed in this paragraph is typical of individuals aged 35-45 at Mt. Nebo. Brothwell (in Bass 1971) provides a similar age for this pattern of wear. It should be noted, however, that the rate of tooth wear differs between populations.

An upper right molar 2 was also recovered. Mesio-distal diameter, bucco-lingual diameter, and crown height were 10.6, 12.6, and 4.8 mm respectively. This tooth was even more worn than that discussed above. The pulp may even have been exposed. However, the degree of wear remained within the 35-45 year range shown by Brothwell (in Bass 1971) and by Giardino (1977).

An upper right molar 3 was also recovered. Mesio-distal diameter, bucco-lingual diameter, and crown height were 9.1, 11.7, and 5.4 mm respectively. The tooth was polished and worn, but very little dentine was exposed. The degree of wear is similar to that shown by Brothwell (in Bass 1971) and by Giardino (1977) for individuals aged 25-35.

A molar crown was also recovered. The roots were no longer present, but it appeared that two were formerly present, indicating that this crown derives from a lower molar. Position and side were uncertain. However, the pattern and degree of wear was similar to that on a left lower molar 2 from Level 2. Giardino (1977) indicates that the same degree of wear would represent the age range 25-35 years in the Mt. Nebo population.

Three tooth fragments were also recovered. One appeared to represent an upper premolar, while two appeared to represent upper molars. Crown height on the probable premolar was 5.8 mm and on the two probable molars was 3.9 and 4.3 mm.

Level 2 yielded only two teeth. One of these was a left lower molar 2 with a degree of wear comparable to that of the age range 25-35 years at the Mt. Nebo site (Giardino 1977). Mesio-distal diameter, bucco-lingual diameter, and crown height were 10.7 mm, 10.3 mm, and 5.1 mm respectively. The second tooth from this level was identified as a deciduous molar. The roots were not present and may not have been fully formed. The tooth was not worn, and probably was barely erupted at the time of death. Crown dimensions and height were 9.1 x 9.3 x 2.2 mm.

With the exception of the deciduous tooth, all of the bones recovered in Excavation Unit 1 could represent only a single individual. Although the degree of wear is greater on one of the molars, this differential wear pattern could result from some unknown cultural, individual, or dietary practice. If only a single individual is represented, however, the occurrence of cranial fragments in levels and areas directly above the pelvic girdle and lower limbs would indicate either disturbance or separate burial of the skull. Such practices are not unknown in Louisiana. An alternative explanation is that more than one individual is represented.

The shell bead from Level 1 had an inside diameter, outside diameter, and thickness of 4.5 mm, 14.9 mm, and 4.8 mm respectively. The same measurements for the bead from Level 2 were 2.4 mm, 6.0 mm, and 3.8 mm (Figure 24).

To the excavated depth, soil in the unit represented *Rangia* midden. Shells were abundant. The matrix was a 10YR3/1-3/2 (very dark gray to very dark grayish brown) clayey silt. The nature of the soil indicates that the burial was intrusive into pre-existing midden.

A sample of shells was extracted from the midden adjacent to the burial. These shells were forwarded to Beta Labs for radiocarbon dating. The sample provided an uncalibrated date of 1380 ± 80 B.P. Using correction factors of Stuiver and Becker (1986), the calibrated

date would be A.D. 648 (range of A.D. 542-772 at two standard deviations).

Excavation Unit 2 (EU2)

Excavation Unit 2 (EU2) was located on the north slope of Midden E (Figure 21). Datum was established in the northeast corner of the unit (N20.25 W127). The datum string in that corner was 25 cm above surface. However, the south side of the unit was at a higher elevation and ground surface there was only 4 cm below datum.

Level 1 was excavated so that the floor of the unit was level at 25 cm below datum. All subsequent levels were 10 cm. Levels 1 to 3 consisted of *Rangia* shells in a silt matrix. Level 4 and the levels excavated below that consisted almost entirely of compacted *Rangia* shells with only very small amounts of soil matrix.

Water began to enter the unit as Level 5 (55 to 65 cm below datum) was excavated, and in Level 6 an effort was made to use a battery-operated bilge pump to drain the unit. The pump's capacity was 30 gallons/minute, but water level remained constant whether the pump was on or off, indicating that inflow matched the pump's capacity.

Water level within the unit was stable at 68 cm below datum. The unit was elevated above the marsh, adjacent to the north slope of Midden E. The level of the marsh relative to datum was 57 cm at the very edge of the midden and 64.5 cm at a greater distance from the midden. These measurements indicated that the depth of the water table in the marsh had been reached within the unit and that the dense *Rangia* midden with virtually no soil content was allowing the ground water to flow freely into the unit.

To continue excavation, a much larger, gasoline-powered pump was brought to the site. This and the bilge pump were used simultaneously to continue the excavation to a depth of 93 cm below datum. At that depth, the influx of water was once again faster than the outflow using both the bilge and gasoline-powered pump. Excavation was halted.

The unit had yielded only a very small number of artifacts. A profile was drawn of the south wall (Figure 26) which shows that relative to that highest portion of the unit, the excavation reached a depth of

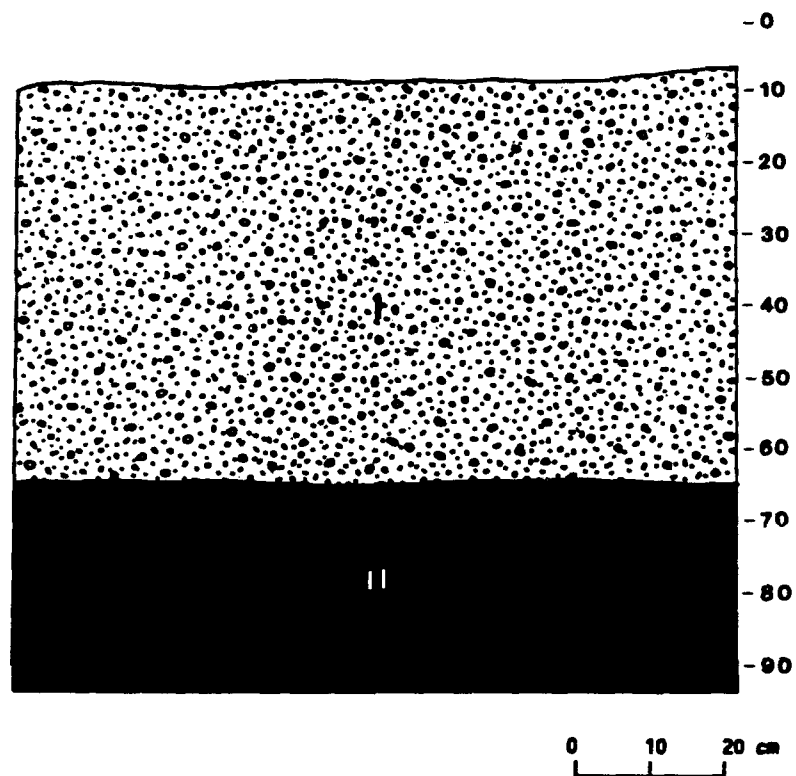


Figure 26. Profile of the south wall of EU2, 16SB39.

Stratum I	10YR 3/2 (very dark grayish brown) silt
Stratum II	10YR 2/1 (black) clayey silt midden

83 to 89 cm below surface. Only two strata were observed. Stratum I consisted of 10YR 3/2 (very dark grayish brown) silt with dense *Rangia*. Stratum II was a 10YR 2/1 (black) clayey silt midden soil with very dense *Rangia*. *Rangia* shells were so dense in Stratum II that soil matrix could be extracted only by scooping it out of shells. Shell was too dense for excavation of an auger test in the floor of the unit.

Excavation Unit 3

This 1 x 1 m unit was situated on a slightly elevated feature between Middens D and E (Figure 21). This feature rose only about 30 cm or less above the level of the marsh and was thus much lower than either Midden D or E. The unit was situated adjacent to a portion of Shell Beach Bayou with sufficient water to allow water-screening of all soils. Datum was established at ground surface in the NW (also the highest) corner of the unit at N0 W12. Excavation proceeded by 10 cm arbitrary levels.

Level 1 consisted of only a moderate amount of *Rangia* shells in a silty clay matrix, and yielded only a very few sherds. The soil in Level 2 appeared to have a higher clay content, and there were a few more sherds than in Level 1. In Level 3 (20-30 cm), the density of *Rangia* decreased in most of the unit. The exception was an area in the SW corner of the unit which exhibited black, greasy, midden soil with a higher density of *Rangia*. The borders of the darker area were poorly defined. However, it could be seen that this different soil extended out 48 cm E of the W wall and 40 cm N of the S wall.

A decision was made to excavate those portions of Level 4 that were outside this area of darker soil in order to determine whether black, greasy midden soil was present at a greater depth throughout the unit or whether the dark area in the southwest corner represented a feature. After only a very little soil was removed, it was apparent that the darker soil, now designated Feature 1, was confined to a well-defined area. Feature 1 is shown in plan view at 30 cm in Figure 27.

Within Level 4 (30-40 cm), Feature 1 was excavated and screened as a separate provenience. The density of sherds and shells was greater within the feature than was the case in the remainder of the unit. However, overall shell density seemed to be somewhat greater in

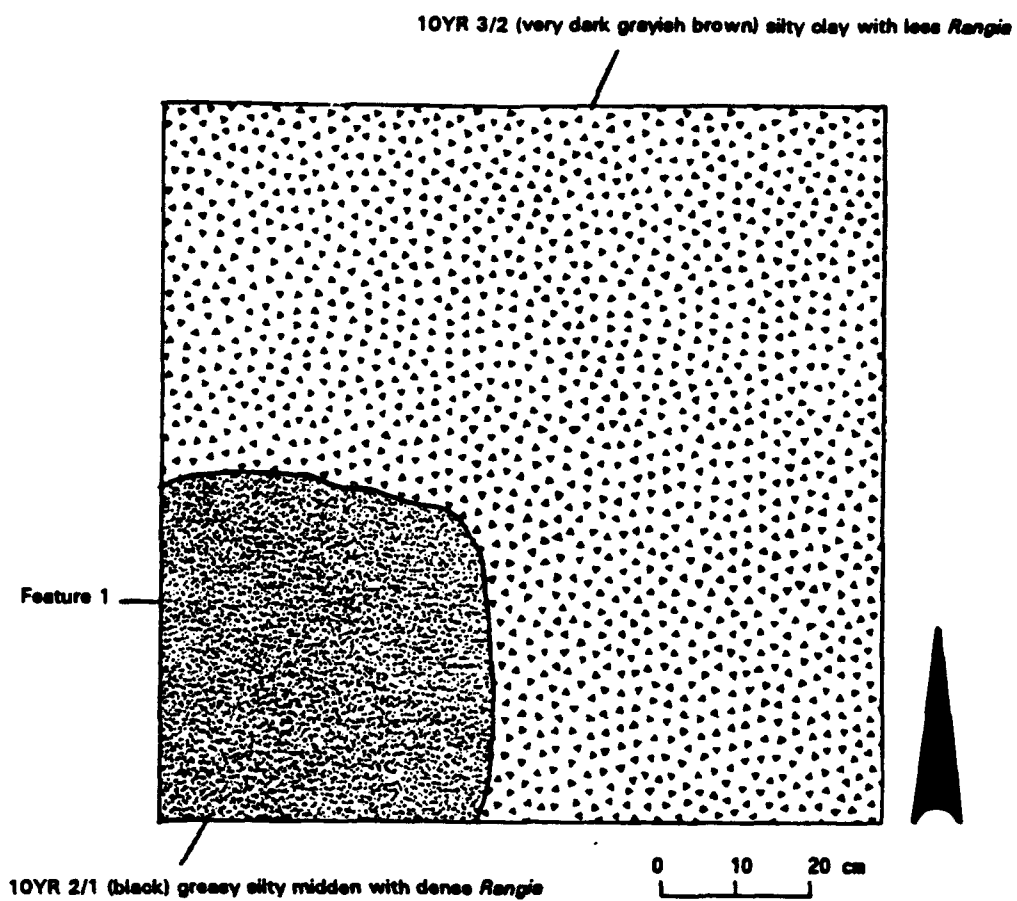


Figure 27. Plan showing Feature 1 in EU3 (16SB39) at 30 cm.

the entire south half of the unit relative to the north half. Near the base of Level 4 (i.e., between 39 and 40 cm), a thin layer of apparently sterile clay was observed on the north side of the unit. Water inflow was greatly increased, and during excavation of this level it became necessary to dig a sump in the northwest corner of the unit and to use a pump.

The inflow of water made it difficult to discern the borders of Feature 1 at 40 cm, although it was clear that soil was generally darker in the southwest portion of the unit. For this reason, the southwest quadrant of the unit was excavated as a separate provenience in Level 5 (40-50 cm). At a depth of 45 cm, an area of 10YR 6/2 (light brownish gray) ash was noted. It appeared to extend into the south wall of the unit within the southwest quadrant. This area of ash was designated Feature 2. Samples of the feature were bagged, but because of its poorly defined borders, the remainder of the soil from Feature 2 was screened with the southwest quadrant provenience. This portion of the unit yielded lumps of fired clay, a pottery coil, and a quartzite stone which had been smoothed and flattened due to utilization (Figure 28). This artifact, as well as the pottery coil recovered in this and the underlying level respectively, indicate that pots were being made at this location. It is possible that the ash lens represents the area where the pots were actually fired.

The quartzite stone is tentatively identified as a tool used to smooth pottery. It is exotic because stone does not occur naturally in St. Bernard Parish. Exotic lithic materials were also recovered at 16SB40 and at 16SB140 (Chapters 9 and 10). In 1935, stones similar to the one discussed in this paragraph were collected on the Chandeleur Islands. They co-occurred with aboriginal pottery. Dohm (1936:397) was unable to identify the source. Paul Heinrich examined the quartzite stone from 16SB39. He noted that the most probable source was the Citronelle Formation in the Florida Parishes. He indicated that it appears to represent a utilized stream pebble (Paul Heinrich, personal communication 1993).

A sample of shells was collected from Feature 2 at depth 45-50 cm and forwarded to Beta Labs for radiocarbon dating. The sample provided an uncalibrated date of 1760 ± 60 BP. Using the calibration formula of Stuiver and Becker (1986), the date range at two standard deviations would be A.D. 128-412.

The southwest quadrant of the unit continued to be excavated and screened as a separate provenience in Level 6 (50-60 cm). The area of 10YR 6/2 ash was no longer present below 57 cm. This level was distinguished by recovery of a very few *Unio* shells mixed with the *Rangia*. Also the size of the *Rangia* shells appeared to increase at the base of the level. Lumps of fired clay were recovered from the southwest quadrant. Some of these lumps were in the shape of the interior of *Rangia* shells.

Because Feature 1 and Feature 2 were no longer apparent at 60 cm, Level 7 was excavated as a single provenience. At the base of this level (70 cm), an ash concentration within an area of darker soil was apparent in the floor in the southeast portion of the unit. The borders of the ash concentration were not well-defined and it was not assigned a feature designation. However, its color was similar to that of Feature 2.

Because of the amount of water flowing into the unit, excavation conditions had become more difficult. After Level 7 was completed, the depth of the sump was increased and the walls of the unit were cleaned. After cleaning of the unit walls, the ash concentration could be seen in the south wall, beginning at a depth of approximately 65 cm.

The southeastern concentration of ash continued in Level 8 (70-80 cm), but the area of darker soil did not appear to be present. There was more broken-up shell at this depth than in higher levels. The consistency of the broken shell was such that, at times, the excavators characterized the matrix as "*Rangia* hash." In Level 9 (80-90 cm) it appeared that the clay content was higher and the shell density lower in the southern half of the unit. Shells in Level 9 and Level 10 (90-100 cm) were large, measuring 6 to 7 cm across. Some of the bone within Level 10 had been burned.

Excavation of the unit was terminated at 1 m below surface. However, an auger test was placed in the floor of the unit. The auger test indicated that *Rangia* midden soils continued to a depth of approximately 235 cm below ground surface. At 240 cm, sterile clay was encountered. This clay presumably represents the pre-occupation surface of the natural levee associated with Shell Beach Bayou. It lies at a depth of approximately 2 m below the elevation of water in the bayou at the time the unit was excavated.

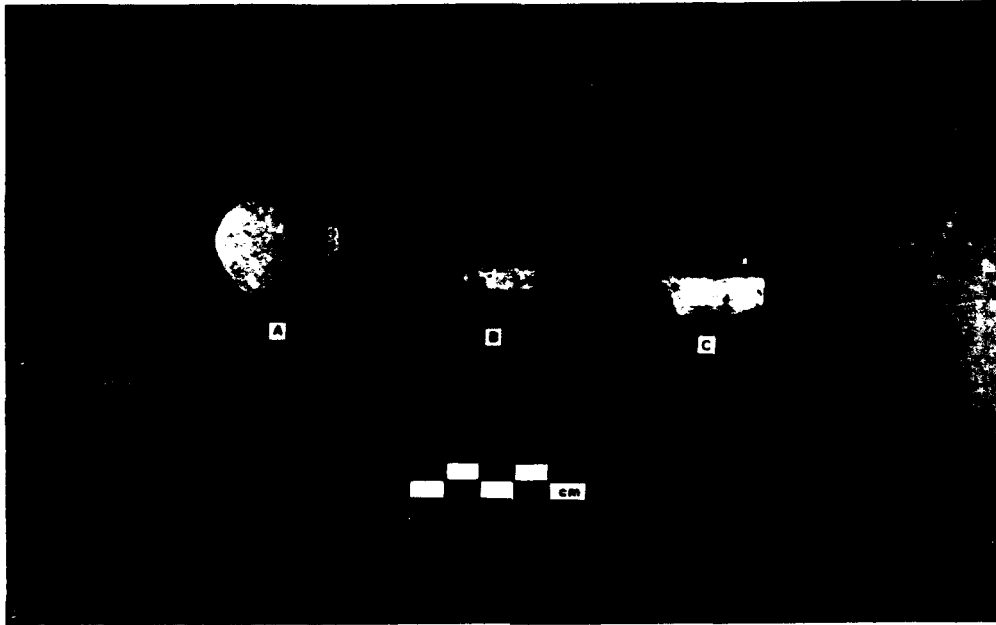


Figure 28. Quartzite stone and pottery coils from Feature 1, Level 4, Excavation Unit 3 at 16SB39.

Figure 29 shows the south wall profile of EU3. Features 1 and 2 were not apparent in the wall, although part of the area occupied by those features consisted of a soil different from that above and below. The southeastern ash lens could, however, be clearly defined in the south wall. Strata II and IV were both black (10YR 2/1), greasy midden soils that were differentiated by the absence of clay in Stratum IV. As noted above, the auger test in the floor of the unit indicated that Rangia continued to be present to a depth of 235 cm below surface. The shell content varied between 100 and 235 cm. For instance, "shell hash" was recovered at 160 cm. Also, the silt content of the midden increased dramatically at 190 cm. Possible ash lens were encountered in the auger.

Faunal Remains

Faunal remains from each level of the three excavation units were counted and weighed. In accordance with the Scope of Services, faunal material was not classified at the lowest possible taxonomic level. Rather, the material was examined briefly, without the aid of a comparative collection, to determine which major taxa were represented. The results are presented in Table 4. Remains of fish, small mammals, and large mammals were identified. Muskrat appeared to be relatively common. Preservation was good, and the results of the examination indicate that a detailed analysis of a larger sample from the site would provide information about the composition and diversity of the diet of site's occupants.

Analysis of Ceramic Artifacts (by T.R. Kidder)

Methods. The ceramics from this and other sites discussed in this report were analyzed and classified according to standard methodologies developed in the Lower Mississippi Valley. Sherds were sorted into temper categories corresponding to published ceramic types, and decorated pottery was further divided into varieties based on specific decorative criteria. The type-variety nomenclature is based on Phillips (1970) and Williams and Brain (1983), supplemented by descriptions of pottery from nearby sites and aboriginal components (Brown 1982, 1984, in press; Fuller and Fuller 1987; McIntire 1958; Wiseman et al. 1979).

Paste characteristics were identified by macroscopic examination, aided by the use of a low-power

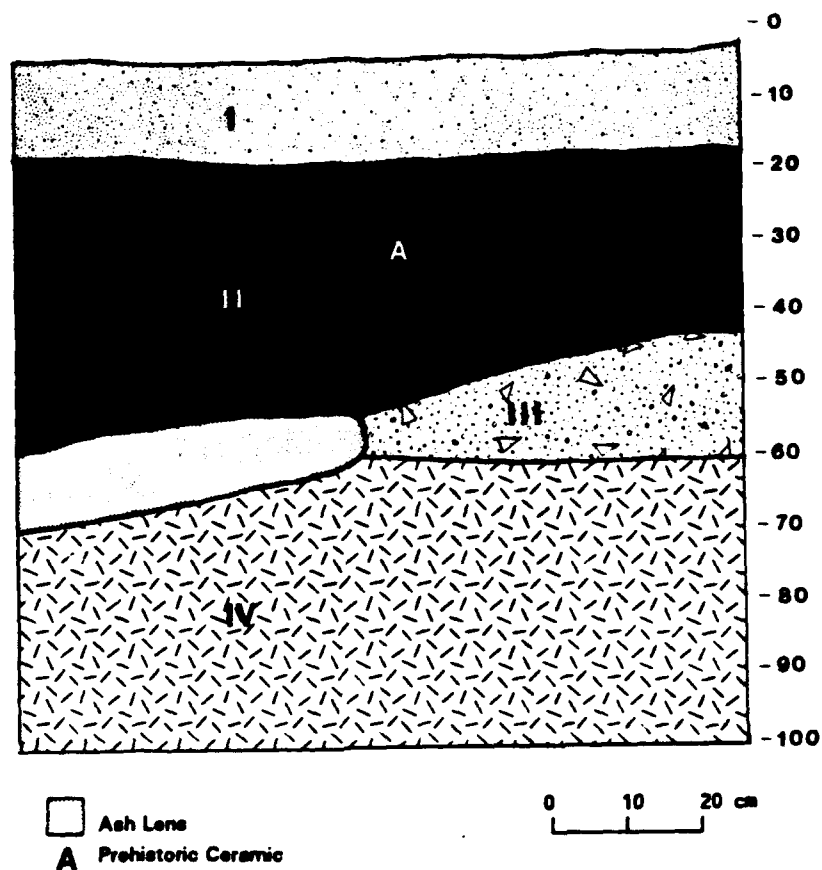


Figure 29. South wall of EU3, 16SB39. Stratum I = 10YR 3/2 clayey silt. II = 10YR 2/1 clayey silt midden. III = 10YR 2/2 silt midden with finely "ground" Rangia. IV = 10YR 2/1 silt midden. The ash lens is 10YR 6/2 ash with small fragments of burned shell.

Table 4. Summary of Faunal Remains from Excavation Units at 16SB39.

16SB39, EU1

Prov- enience	# Specimens	Wt (gms)	Major Taxa
L1	8	2.1	fish and unidentified
L2	2	0.6	unidentified
L3	3	0.7	unidentified

16SB39, EU2

Prov- enience	# Specimens	Wt (gms)	Major Taxa
L1 some	6	1.7	predominantly fish; unidentified
L3	3	5.8	fish; unidentified
L4	1	0.3	fish
L7	2	0.7	muskrat; unidentified
L9	23	8.9	predominantly fish
L10	9	1.2	fish

16SB39, EU3

Prov- enience	# Specimens	Wt (gms)	Major Taxa
L1	2	0.4	fish; unidentified
L2	1	0.8	muskrat
L3	6	9.7	muskrat; unidentified small mammal; unidentified
L4	23	9.5	fish; small mammals including muskrat; unidentified
L5	36	11.2	predominantly fish; unidentified small mammal; unidentified
L6	83	27.1	predominantly fish; muskrat; unidentified small mammal; unidentified
Sump	2	1.0	unidentified

Table 4 (continued). Summary of Faunal Remains from
Excavation Units at 16SB39.

Prov- enience (EU3)	# Specimens	Wt (gms)	Major Taxa
L7	39	10.7	predominantly fish; muskrat; unidentified small mammal; unidentified
L8	36	21.9	predominantly fish; 1 large mammal (deer ?) fragment probably worked; unidentified large mammal; unidentified small mammal; unidentified
L9	100	39.8	predominantly fish; muskrat; unidentified
L10	218	61.5	predominantly fish; unidentified small mammal; unidentified

hand lens where attribution to a specific temper category was uncertain. The bulk of pottery falls in the category Baytown Plain, which is characterized as a "clay" or "grog" tempered ceramic. Although there are existing varietal definitions of this ceramic plainware (Phillips 1970:47-57; Williams and Brain 1983:91-105), these were not utilized in this analysis because the sample size is too small for adequate comparative analysis. The condition of many sherds, which were frequently severely eroded or wave-washed (at sites other than 16SB39 and excavated contexts at 16SB40 and 16SB140), further compounded the difficulties of varietal attribution. In the quantification of Baytown Plain pottery there is a row which lists sherds which were smaller than 1/4" in length and width. This category was established to provide the reader with an impression of the ceramic sample and to gauge the integrity of the sample as far as analysis is concerned. Samples with large amounts of very small sherds can be misleading if these crumbs or "sherdlets" are not clearly identified. Shell tempered pottery was also recovered in small quantities in sites other than 16SB39. This pottery could be assigned to a single variety, Mississippi Plain, var. Pomme d'Or, which is a late prehistoric ceramic identified in the Delta region of coastal Louisiana (Wiseman et al. 1979:5,6).

Decorated pottery was sorted according to characteristics of decorative intent (incising, punctation, and combinations), and assigned to varieties where possible based on comparison with published materials. Following Phillips' (1970:27) rule of continuity, identification of sherds to the variety level was avoided whenever there was no locally defined taxon available. In rare instances, varieties defined farther up the Mississippi Valley were used because the sherd(s) in question bear a virtually complete resemblance to the existing defined varieties. In some instances, it is noted that sherds defined as var. Unspecified share attributes with named varieties in other parts of the Mississippi Valley or Gulf Coast. Ideally, varieties should be identified within the existing sample; however, because of the small sample of decorated sherds this is simply not possible. Conservative use of variety attribution is called for in this instance in order to prevent "typological creep" of inappropriately classified ceramics. The Mississippi River Delta is culturally unique and the ceramics deserve their own specific classification. As several authors have noted (Phillips 1970; Weinstein 1987), it

is imperative for regional sequences to be developed based on local ceramic attributes and varieties.

Rim nodes and attributes, although not specifically diagnostic, are also helpful in defining time-space units. Where possible, rim and lip nodes have been presented in order to provide the most specific data for comparative purposes. In the tables, rims are divided by vessel shape (bowls, jars, beakers, plates, and indeterminate). Rim forms have been defined by descriptive criteria, and these definitions are followed by lip attributes, which are likewise descriptive. In some cases these rim and lip attributes are similar to previously defined "Rim Modes" (Brown 1982; Fuller and Fuller 1987), and these named modes are identified in quotes within parentheses. Once again it is imperative that the typology reflect a conservative approach in order to prevent the use of inappropriately named modes which might, in the long run, simply confuse the definition of the regional culture history.

Overview. Tables 5, 6, 7 and 8 list the ceramics from all contexts at 16SB39. Figures 30, 31, 32, and 33 are illustrations of selected decorated sherds and rim profiles.

A glance at the tables indicates that there appear to be at least two components at 16SB39, one dating to the Baytown period, and the other to the Coles Creek period. A closer examination of the tables suggests that the two components probably date from the early Baytown period and the early Coles Creek period, respectively. The ceramics from the three excavations are discussed in more detail below.

Ceramics in Excavation Unit 1. Only two levels and part of a third were excavated in this unit because of the burial (above). However, the small ceramic sample does suggest the presence of a probable early Coles Creek component (Table 5). Most notable in this regard is the presence of a single French Fork Incised vessel, represented by one sherd from Level 2 (Figure 30b) and a second sherd from Level 3. These two sherds join to form one portion of the rim and neck of a straight walled beaker with a thin, tapered rim. Although the rim is thin and tapered, it does not represent a late Coles Creek "Vicksburg" rim because it does not taper to a fine point, nor is it on a Vicksburg paste. The French Fork sherd has a design consisting of a curvilinear scroll element extending from just below the lip down to a zoning line approximately 7 cm below the

Table 5. Ceramic artifacts from 16SB39, Excavation Unit 1

Ceramics	Level 1		Level 2		Body Total
	Rim	Body	Total	Rim	
Addis Plain, <u>var. Unspecified</u>		1	1		0
Baytown Plain, <u>var. Unspecified</u>		4	4	1	5
Baytown Plain, <u>var. Unspec., (<1/4")</u>	3	14	17		7
Coles Creek Incised, <u>var. Unspec.</u>		1	1		0
French Fork Incised, <u>var. Unspec.*</u>				1	1
Unclass. Incised on Baytown Plain, <u>var. Unspecified</u>		1	1		0
Unclass. Punctated on Baytown Plain, <u>var. Unspecified</u>	1		1		0
Total Ceramics	4	21	25	2	12
			Total		14
Rims					
Bowls: Exterior Strap, Round Lip (IIA)					Total
Beaker: Unmodified Rim, Tapered Lip					2
Indeterminate: Simple, Round Lip			1		1
Simple, Flat Lip			2		
Tapered			1		
Total Rims			4		3

*The two French Fork Incised sherds in Levels 2 and 3 form one sherd

Table 5 (continued). Ceramic artifacts from 16SB39, Excavation Unit 1

Ceramics	Level 3		Total	Level 4		Total
	Rim	Body		Rim	Body	
Addis Plain, <u>var. Unspecified</u>				1	1	
Baytown Plain, <u>var. Unspecified</u>		4	4	13	14	
Baytown Plain, <u>var. Unspec., (<1/4")</u>	1	1	2	22	26	
Coles Creek Incised, <u>var. Unspec.</u>				1	1	
French Fork Incised, <u>var. Unspec.*</u>		1	1	1	2	
Unclass. Incised on Baytown Plain, <u>var. Unspecified</u>				1	1	
Unclass. Punctated on Baytown Plain, <u>var. Unspecified</u>						
Total Ceramics	1	6	7	39	46	
Rims			Total		Total	
Bowls: Exterior Strap, Round Lip (IIA)					1	
Beaker: Unmodified Rim, Tapered Lip					1	
Indeterminate: Simple, Round Lip			1		2	
Simple, Flat Lip					2	
Tapered					1	
Total Rims			1		7	

***The two French Fork Incised sherds in Levels 2 and 3 form one sherd**

Table 6. Ceramic Artifacts from 16SB39, Excavation Unit 2

Ceramics	Level 1		Total	Level 2		Total
	Rim	Body		Rim	Body	
Baytown Plain, <u>var. Unspecified</u>	1	9	10	1	1	2
Baytown Plain, <u>var. Unspec.</u> , (<1/4")		6	6		2	2
Total Ceramics	1	15	16	1	3	4
Rims						
Bowls: Unspecified Rim, Simple, Flat Lip			Total			Total
Indeterminate: Simple, Round Lip			1			1
Total Rims			1			1

Table 6 (continued). Ceramic Artifacts from 16SB39, Excavation Unit 2

		Level 3		Level 4		
		Rim	Body	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified		1	5		2	2
Baytown Plain, var. Unspec., (<1/4")			5		3	3
Total Ceramics		1	10	0	5	5
Rims						
Bowls: Unmodified Rim, Flat Lip with Burr						
Total Rims						0

Table 6 (continued). Ceramic Artifacts from 16SB39, Excavation Unit 2

	Level 6		Level 7	
	Rim	Body	Rim	Body
Ceramics				
Baytown Plain, var. Unspecified		2		3
Baytown Plain, var. Unspec., (<1/4")		2		4
Total Ceramics				7
				Total
				3
				4
				7

Table 6 (continued). Ceramic Artifacts from 16SB39, Excavation Unit 2

Ceramics	Level 9			Total
	Rim	Body	Total	
Baytown Plain, <u>var. Unspecified</u>	1	1	2	Total Body 23 Rim 4 Total 27
Baytown Plain, <u>var. Unspec.</u> , (<1/4")		7	7	
Total Ceramics	1	8	9	
Rims				
Bowls:	Total			Total 1 1 1 1 4
Unmodified Rim, Simple, Flat Lip				
Unmodified Rim, Flat Lip With Burr				
Irregular Rim with Small Lug or Peak	1			
Simple, Round Lip				Total 1 1 4
Total Rims	1			

Table 7. Ceramic artifacts from 16SB39, Excavation Unit 3

	Level 1			Level 2		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. <u>Unspecified</u>		5	5		7	7
Total Ceramics		5	5		7	7

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

	Level 3			Level 4		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified		25	25	1	21	22
Baytown Plain, var. Unspec., (<1/4")		31	31		21	21
Marksville Stamped, var. Baton Rouge*		10	10		2	2
Unclass. Incised on Baytown						
Plain, var. Unspecified		1	1			
Total Ceramics		67	67	1	44	45
Rims			Total			Total
Indeterminate: Simple, Flat Lip						1
Total Rims						1

*All the Marksville Stamped Sherds appear to be from the same vessel.

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

	Level 4			Level 5		
	Feature 1					
Ceramics	Rim	Body	Total	Rim	Body	Total
Baytown Plain, var. Unspecified	1	28	29		13	13
Baytown Plain, var. Unspec., (<1/4")		15	15		29	29
Marksville Stamped, var. Baton Rouge*		3	3			
Total Ceramics	1	46	47		42	42
Rims			Total			Total
Bowls: Unmodified Rim, Flat Lip With Burr			1			
Total Rims			1			

*All the Marksville Stamped Sherds appear to be from the same vessel.

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

Ceramics	Level 5			Level 6		
	Rim	Body	Total	Rim	Body	Total
Baytown Plain, var. Unspecified		6	6		11	11
Baytown Plain, var. Unspec., (<1/4")		11	11		33	33
Unclass. Incised on Baytown Plain, var. Unspecified		1	1		1	1
Total Ceramics		18	18		45	45

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

Ceramics	Level 6			Level 7		
	SW Quadrant			Rim	Body	Total
Baytown Plain, var. <u>Unspecified</u>				2	30	32
Baytown Plain, var. <u>Unspec.</u> , (<1/4")		22	24		32	32
Larto Red, var. <u>Unspecified</u>		17	17		2	2
Marksville Incised, var. <u>Unspecified</u>					1	1
Salomon Brushed, var. <u>Unspecified**</u>					1	1
Unclass. Incised on Baytown						
Plain, var. <u>Unspecified</u>				2	2	2
Total Ceramics	2	39	41	2	68	70
Rims						
Bowls: Unmodified Rim, Simple, Round Lip			Total			Total
("Salt Mine Valley" [IA])			1			1
Jar: Short Neck, Simple, Round Lip						
Indeterminate: Simple, Flat Lip			1			1
Total Rims			2			2

**The brushing is very faint.

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

	Level 8			Level 9		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified	1	41	42		29	29
Baytown Plain, var. Unspec., (<1/4")		29	29		73	73
Marksville Incised, var. Unspecified		1	1		1	1
Plain, var. Unspecified					2	2
Total Ceramics	1	71	72		103	103
Rims						
Indeterminate: Simple, Round Lip			Total			Total
Total Rims			1			1

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

	Level 10			Sump 55-63 cm		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified		15	15		4	4
Baytown Plain, var. Unspec., (<1/4")		36	36			
Total Ceramics		51	51		4	4

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

Ceramics	Sump 62-70 cm		Sump 80-90 cm		Total
	Rim	Body	Rim	Body	
Baytown Plain, var. Unspecified		2	1	3	4
Baytown Plain, var. Unspec., (<1/4")				6	6
Total Ceramics		2	1	9	10
Rims					
Bowls: Unmodified Rim, Simple, Round Lip					Total
("Salt Mine Valley" [IA])					1
Total Rims					1

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

	Sump 99-100			Wall Cleaning
Ceramics		Rim	Total	Body
Baytown Plain, var. Unspecified	2		4	1
Baytown Plain, var. Unsped., (<1/4")	2		2	
Marksville Stamped, var. Baton Rouge*				1
Total Ceramics	4		6	2
			Total	Total
Rims			2	
Jar: Unmodified Rim, Simple, Flat Lip (IA)			2	
Total Rims			2	

***All the Marksville Stamped Sherds appear to be from the same vessel.**

Table 7 (continued). Ceramic artifacts from 16SB39, Excavation Unit 3

	Total	
Ceramics		
Baytown Plain, var. Unspecified	Rim 10	Body 265
Baytown Plain, var. Unspec., (<1/4")		335
Larto Red, var. Unspecified		2
Marksville Incised, var. Unspecified		3
Marksville Stamped, var. Baton Rouge*		16
Salomon Brushed, var. Unspecified**		1
Unclass. Incised on Baytown Plain, var. Unspecified		5
Total Ceramics	10	627
Rims		
Bowls: Unmodified Rim, Simple, Round Lip		3
("Salt Mine Valley" [IA])		1
Unmodified Rim, Flat Lip With Burr		1
Jar: Short Neck, Simple, Round Lip		2
Unmodified Rim, Simple, Flat Lip (IA)		1
Indeterminate: Simple, Round Lip		2
Simple, Flat Lip		10
Total Rims		

*All the Marksville Stamped Sherds appear to be from the same vessel.

**The brushing is very faint.

Table 8. Ceramic Artifacts from Shovel/Auger Tests and Surface Collections at 16SB39.

Ceramics	A.T.8 (N13 W51)		Midden C		
	Rim	Body	Rim	Body	Total
Baytown Plain, var. Unspecified		1			
Unclass. Incised on Baytown				7	7
Plain, var. Unspecified				1	1
Total Ceramics		1		8	8

Table 8 (continued). Ceramic Artifacts from Shovel/Auger Tests and Surface Collections at 16SB39.

	Midden D	Midden D (W. End)
	S11 E14	NO-2 WO-5
	Rim	Rim
	Body	Body
	Total	Total
Ceramics		
Baytown Plain, var. Unspecified		1
Baytown Plain, var. Unspecified (Brown slipped)		3
Churupa Punctated, var. Unspec.	1	1
Marksville Incised, var. Unspec.	1	1
Total Ceramics		5
	Total	Total
Rims		
Jars: Direct Rim, Flat Lip With Large Notched on Interior		1
"Seed Jar", Flat Lip	1	
Total Rims	1	1

Table 8 (continued). Ceramic Artifacts from Shovel/Auger Tests and Surface Collections at 16SB39.

Ceramics	Midden E			Total		
	Rim	N10	E110	Total	Rim	Body
Baytown Plain, var. Unspecified				1		10
Baytown Plain, var. Unspecified (Brown slipped)						3
Churupa Punctated, var. Unspec.					1	
Marksville Incised, var. Unspec.					1	
Unclass. Incised on Baytown Plain, var. Unspecified						1
Total Ceramics		1		1	2	14
				Total		Total
						16
Rims						
Jars: Direct Rim, Flat Lip With Large Notch on Interior						1
"Seed Jar", Flat Lip						1
Total Rims						2



Figure 30. Selected rims and decorated sherds from Excavation Units 1 and 2 at 16SB39 (Scale 1:1). A) Unclassified Punctated - simple, flat lip (EU1 Level 1); b) French Fork Incised, var. *Unspecified* - unmodified rim, tapered lip (EU1 Level 2); c) Unmodified rim, flat lip with burr (EU1 Level 3).

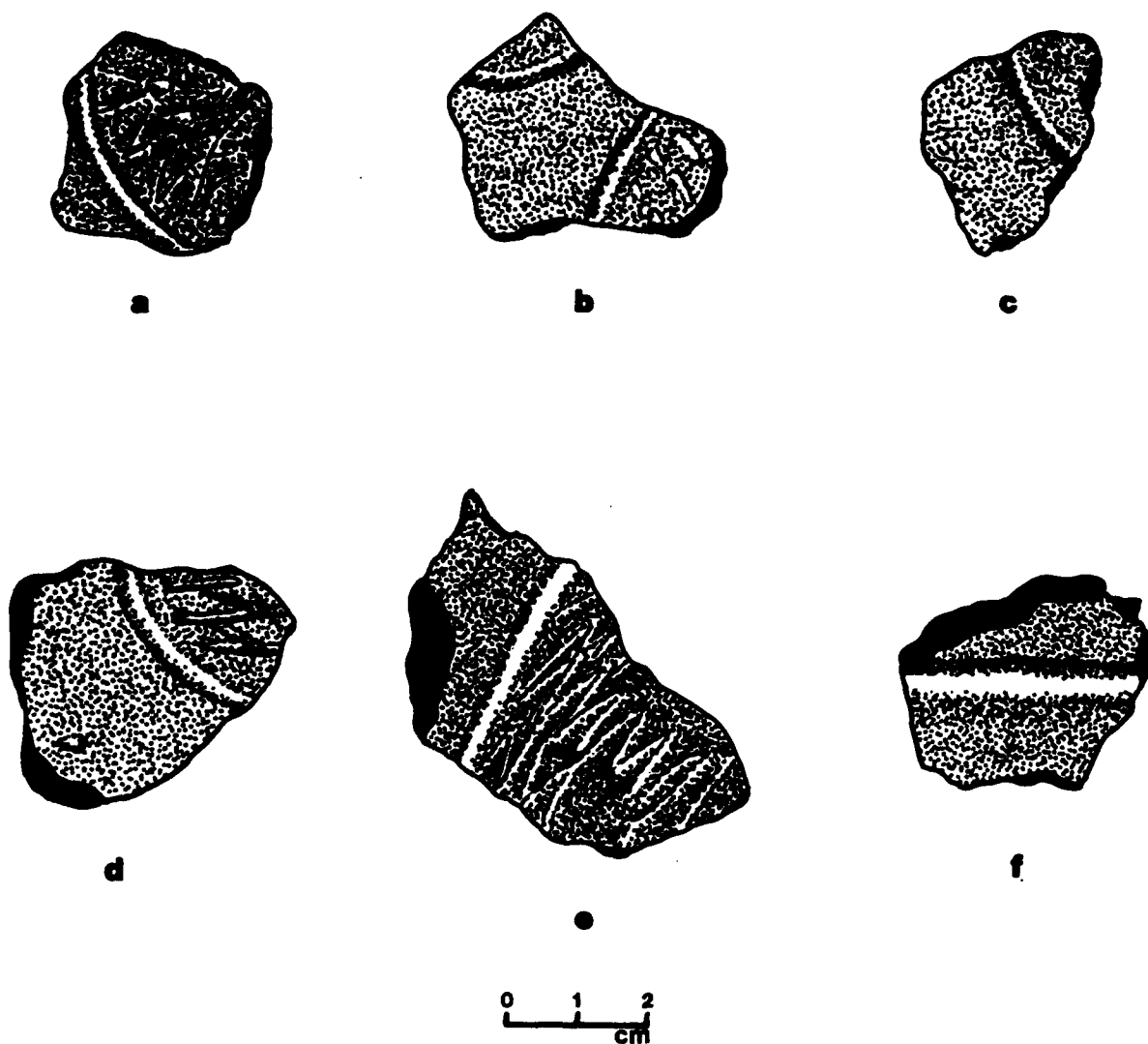


Figure 31. Selected sherds from Excavation Unit 3 at 16SB39 (scale 1:1). A-e) Marksville Stamped, var. Bayou Rouge and f) Marksville Incised var. *Unspecified*. Proveniences : a-c) EU3 Level 3; d) EU3 Artifact A 31cm B.D. South Wall; e) EU3 Level 4; f) EU3 Level 7.

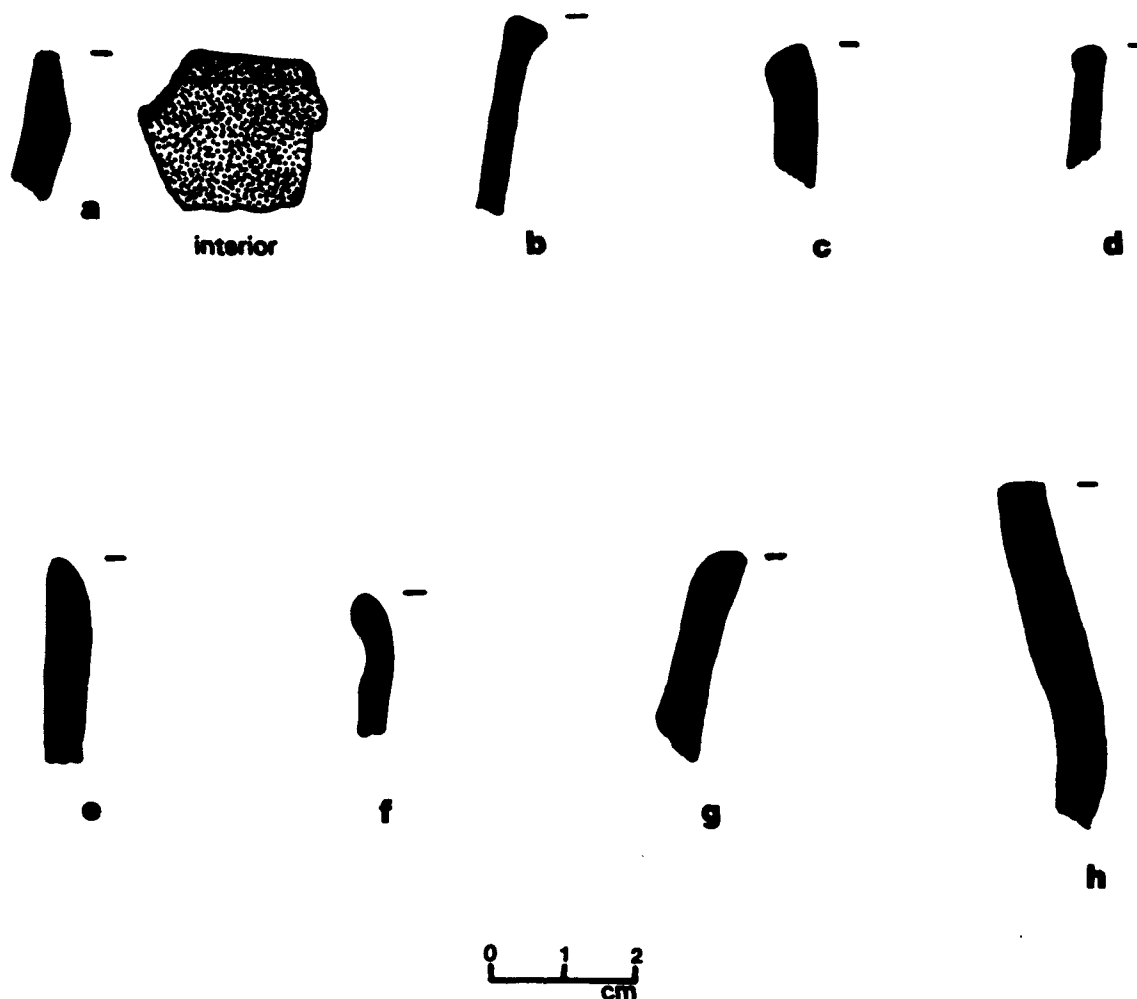


Figure 32. Selected rims from Excavation Unit 3 at 16SB39 (Scale 1:1). A) Simple flat lip (Level 4); b) unmodified rim, flat lip with burr (Level 4 Feature 1); c) unmodified rim, simple, round lip ("Salt Mine Valley" [IA]) (Level 6 SW Quadrant); d) simple flat lip (Level 6 SW quadrant); e) unmodified rim, simple, round lip ("Salt Mine Valley" [IA]) (Level 7); f) short neck, simple, round lip (Level 7); g) unmodified rim, simple, round lip ("Salt Mine Valley" [IA]) (Level 7); h) unmodified rim, simple, flat lip (IA) (Sump [90-100 cm]).

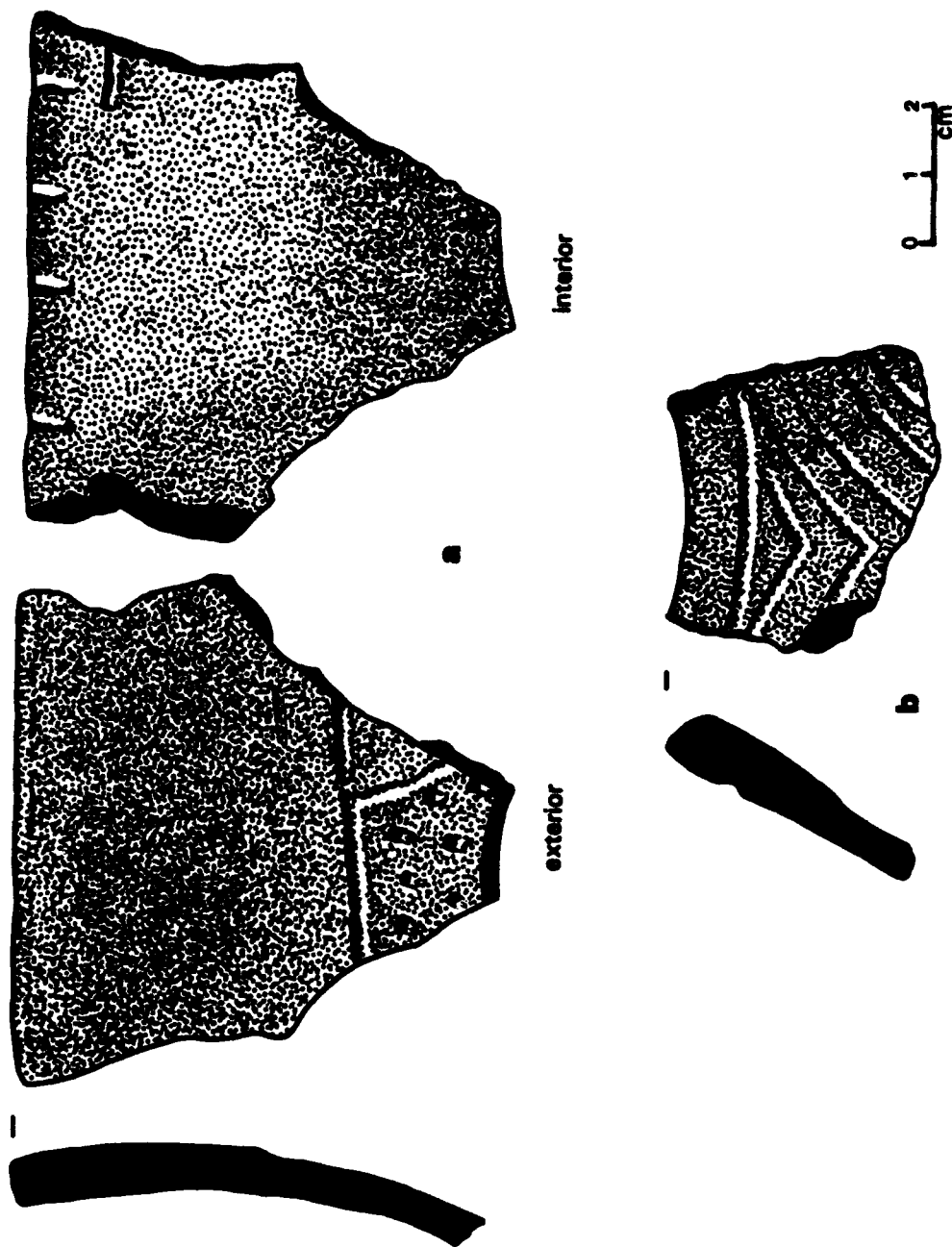


Figure 33. Selected decorated rims from 16SB39 surface collection (Scale 1:1). A) Churupa Punctated, var. unspecified (similar to var. Watson), direct rim, flat lip with large notches on interior (Midden D West End NO-2, WO-5); b) Marksville Incised, var. Unspecified - "Seed Jar", flat lip (Midden D S11 E14).

lip (Figure 30b). The scroll element is blank, but it is framed on at least one side by a dentate (not rocker) stamped design running diagonally up from the bottom zoning line towards the lip. This sherd cannot be classified to variety, but its closest counterpart elsewhere would be French Fork, vars. *Larkin* or *Wilzone* (Phillips 1970: 85-86). The use of dentate stamping is reminiscent of *Wilzone*, but the treatment is not similar to reported materials from the Lower Mississippi Valley.

The other decorated sherds (Table 5) are not especially diagnostic of a particular prehistoric period. The Coles Creek Incised sherd cannot be assigned to any specific variety, although the decoration is wide-spaced and well executed. In this regard it is similar to var. *Blakely*, but there is not enough of the vessel to be certain. The unclassified incised and unclassified punctated sherds (e.g., Figure 30a) are similarly non-diagnostic. The plain pottery consists of a soft, coarse tempered ware, which cannot be assigned to any previously assigned varieties. The surfaces are almost chalky, and the temper particles often extrude through the surface. The plain pottery rim nodes do not appear to be diagnostic and have not been described in any culture historical classification.

Excavation Unit 2. Although Excavation Unit 2 was deeper than Excavation Unit 1, it did not yield any diagnostic decorated sherds (Table 6). A total of 54 plain sherds were recovered, of which half were less than 1/4" in size. The plain pottery was similar to that recovered in Excavation Units 1 and 3 (see below), and was thus not diagnostic. Four rims were recovered, and three were simple in execution. A single small rim fragment from a bowl was excavated from Level 9. This sherd had an irregular rim (it was not symmetrical), and a small "lug" or "peak." Although hardly diagnostic, this kind of rim is most frequently associated with late Baytown or early Coles Creek contexts elsewhere in the Lower Mississippi Valley (Ford 1951).

Excavation Unit 3. This unit was the deepest of the three excavated at 16SB39. It also yielded the largest number of sherds of the excavated samples from 16SB39 (Table 7). Unlike Excavation Unit 1, this unit yielded sherds indicative of an early Baytown period component, as marked by several diagnostic varieties. Most interesting among the diagnostic ceramics was the presence of 16 sherds identified as Marksville Stamped, var. *Bayou Rouge* (Figure 31a-e). All of these sherds appear to derive from the same vessel. They were

recovered from Feature 1 within Levels 3 and 4, and also from the west wall when it was scraped clean.

Other sherds diagnostic of a Baytown period component include the two sherds of Larto Red (probably from the same vessel and on a very thin, hard paste with polished interiors), the unclassified Marksville Incised sherds (which are similar in execution to vars. *Anglim* and *Vick* in the Tensas Basin (Bitgood 1989), and the sherd identified as *Salomon Brushed*. Figure 32 illustrates selected rims from this unit.

Although the sample is small, it would appear that the occupation represented by these sherds probably dates to the early Baytown period. There is no phase specifically identified with the early part of this period in southeastern Louisiana, but elsewhere it would be equivalent to the Black River, Indian Bayou, and Little Sunflower phases in the Lower Red, Tensas, and Yazoo basins, respectively (Belmont 1984: Fig. 3).

Contemporary components have been identified at a number of sites in St. Bernard Parish (Wiseman et al. 1979: Table 4-2), as well as at Bruly St. Martin (16IV6) (Springer 1973: Fig. 19). In most instances Baytown period components have been lumped together under the phase name "Whitehall" (Phillips 1970: 911-912), and no attempt has been made to separate Baytown components into chronologically meaningful units. Excavations at 16SB39 provide a beginning point for attempting to make sense of the Baytown period chronology in the Louisiana Delta region.

Surface Collections. A small surface collection (Table 8) from 16SB39 helps to strengthen the attribution of the early component at the site to the early Baytown period. A single sherd of Marksville Incised, var. *unspecified*, (Figure 33b) resembles very closely the early Baytown variety *Anglim* which is common on Indian Bayou phase sites in the Tensas Basin and adjacent regions (Belmont 1984; Bitgood 1989; Kidder 1990). This sherd is from a sharply restricted globular "seed" jar, with a flat lip. This vessel and lip mode is common at the Baytown period Reno Brake site in Tensas parish (Kidder 1990). The other identified decorated sherd is a rim sherd from a Churupa Punctated vessel (Figure 33a). Although classified as var. *unspecified*, this sherd closely resembles var. *Watson*, an early Baytown period variety associated with the Indian Bayou phase (Bitgood 1989). The rim has a flat lip with large, deep notches on the interior. This mode

is also a common trait in the Indian Bayou and other early Baytown period phases along the Mississippi River.

Discussion of Ceramics. In sum, then, ceramic analysis indicates that 16SB39 is a multicomponent site with two distinct components, one dating to the early Baytown period and the other to the (probably early) Coles Creek period. Although Excavation Units 1 and 3 are spatially separated by only about 20 meters, the ceramics appear to indicate that they represent occupations that are at least several hundred years removed from one another.

Shell from Feature 2 within Excavation Unit 3 provided an uncalibrated radiocarbon date of 1760 ± 60 BP. When calibrated according to the methods used by Stuiver and Becker (1986), the date range at two standard deviations would be A.D. 128-412. That range would encompass the Marksville and Early Baytown Periods. Diagnostic ceramics discussed above indicate that the component of the site represented in Excavation Unit 3 should be placed within the Early Baytown Period, which is consistent with the upper end of the calibrated radiocarbon range.

Shell associated with the burial in Excavation Unit 1 provided a radiocarbon date of 1386 ± 80 B.P. When correction factors outlined by Stuiver and Becker (1986) are applied, the date range at two standard deviations is A.D. 542-772. This range does not overlap with that from shell in Excavation Unit 3 which would appear to support the assertion made above that material in Excavation Unit 1 may be several hundred years later than that in Excavation Unit 3. The upper end of the calibrated date range for Excavation Unit 1 is consistent with very early Coles Creek activity.

Because Excavation Unit 1 was not excavated to its full depth (or potential depth) it is not possible to conclude that these two units mark radically different cultural histories. Excavation Unit 2 is likewise difficult to interpret because it has no appreciable diagnostic ceramics. The rim with the lug could date to the early Baytown period, but it could also just as easily date to the late Coles Creek. The presence of what appear to be temporally discrete (and recognizable) components at 16SB39 makes the site an especially important location for the culture history of the Mississippi River Delta.

CHAPTER 9
SITE 16SB40

Previous Investigations

The "Consolidated Site Record" by Wiseman et al. (1979:Appendix) describes 16SB40 as:

A wave-washed *Rangia* deposit extending for about 700 m along Lake Borgne. Some oyster shell is present toward the west end of the site, where it approaches 16SB71. Both prehistoric sherds, and historic artifacts, probably from SB71, were collected (Wiseman et al. 1979:Appendix).

The floral community at the time this record was completed consisted of live oak, palmetto, and hackberry. Condition of the site was described as "wave-washed" and preservation as "poor." The record concluded with the following interpretation:

The site was probably formerly located along Shell Beach Bayou in a similar manner to SB39. It might even be considered part of the same site. The shoreline of Lake Borgne has eroded back and destroyed the site, redepositing it on the beach (Wiseman et al. 1979:Appendix).

A Site Record Form on file at the Louisiana Division of Archaeology provides additional information. At the time of one of the visits summarized in the form (such visits apparently began in the 1950s), the presence of a small amount of shell midden was observed at low tide. That form indicates that a variety of faunal material had been collected from the site. Prehistoric sherds mentioned in the form were described as "20 water-tumbled sherds, 64 grog, 8 shell-tempered, 8 rims, 1 fine paste untempered." Cultural affiliation was considered to be multi-component with the Marksville, Baytown, Coles Creek, and Mississippi periods represented.

Wiseman et al. (1979:5/24) collected 160 sherds of Baytown Plain, var. *unspecified*; one sherd of Mississippi Plain, var. *Pomme d'Or*; one sherd of Coles Creek Incised, var. *Coles Creek*; and one sherd of Coles Creek Incised, var. *unspecified*. They indicated that the small amount of dateable material suggested the Coles Creek (Bayou Cutler phase) and Mississippi periods. Historic material consisted of two sherds of

lead-glazed earthenware, two of stoneware, and one of blue shell-edged whiteware. Diagnostic glass was dated to the early twentieth century. As noted above, it was considered possible that the historic component was related to that at nearby 16SB71 (Wiseman et al. 1979:5/23-5/25).

Site Description and 1992 Fieldwork

As the preceding summary of previous visits to the site indicates, 16SB40 was first recognized as an exposure of prehistoric material in an extensive lakeshore shell bank. This shell bank is redeposited material west of the channel of the lateral bayou which intersects Shell Beach Bayou at 16SB39 (Figure 21). Shoreline erosion apparently has pushed shell off the submerged western levee of the lateral bayou (marked by a dense stand of tree stumps and roots extending into the lake), and has created a large beach ridge atop the marshland flank of the levee.

Small areas of *in situ* prehistoric midden were recorded during the 1992 fieldwork on the subsided natural levees flanking the abandoned channel. The midden area east of the channel was designated Locus A and the midden area west of the channel, with the adjacent wave-deposited beach ridge, was designated Locus B (Figure 21). An intermittent scatter of *Rangia* and sherds extends about 350 m northwest from the exposed natural levee at Locus B. This scatter ends at a low, marshy shoreline segment where an interior pond drains into Lake Borgne. This intermittent scatter, apparently redeposited in the low beach ridge, was designated Locus C. Site 16SB40 was mapped on the same grid as 16SB39 (datum on Midden D of 16SB39). Surface collections were made during the 1992 pedestrian survey and a series of shovel and auger tests were excavated at the various loci.

Site 16SB40 was reported as extending 700 m along the lakeshore by Wiseman et al. (1979). That length is the total lakeshore exposure of Loci A, B, and C. The current State Site Form reports the site's dimension as a 200' long midden exposure along the lakeshore. That length represents *in situ* midden exposed at low tide stage, probably at Locus B, as noted by the Delta Chapter in 1983.

Shovel tests were placed at 50 m intervals along the shoreline through 16SB40 during the pedestrian survey. Shovel Tests 28-34 east of the marsh channel

dividing 16SB71 and 16SB40 are within Locus C. A wide, low shell ridge of redeposited *Rangia* runs 114 m east from ST31. The sherds found here are almost all prehistoric, and generally are larger and less eroded than those from 16SB71. Auger tests 8' and 9' southeast of ST32 did not yield *in situ* artifacts or midden. Shovel tests 35-38 were placed on the beach within Locus B. These were negative, but slightly to moderately waterworn sherds were collected from the surface here. The infilled channel lies between ST38 and ST39. A dense concentration of sherds extends 15 m east of ST39 along the lakeshore. Pottery was present in an exposure of *Rangia* extending north into the lake on a hard clay/shell surface. This artifact-rich area east of the infilled channel was designated Locus A. Only isolated *Rangia* are present between ST40 and ST42. Shovel Tests 39-41 in Locus A were negative. A low shell ridge between ST42 and ST45 was included as part of 16SB148.

Locus A includes *Rangia* midden exposed at low tide stage atop the submerged natural levee between E43 and E57. The dense *Rangia* extends about 20 m NNW (330 degrees) into Lake Borgne from the high tide line, among a dense cluster of partly submerged tree stumps. A 1 x 1 m excavation unit was placed a short distance southeast of the beach exposure, several meters south of the high tide line (Figure 21). The northeast corner of the unit was at N104 E60. This unit yielded artifact-rich midden from a depth of 67 to 97 cm (below).

Auger tests placed south of EU1 at N93 E52 (AT2') and N91 E62 (AT7) were negative, unlike AT7' which was at the same location as EU1. Sterile natural levee soil is present between Locus A of 16SB40 and Midden A of 16SB39, although the northern end of Midden A is less than 30 m south of EU1. *Rangia* pinches out within the midden exposed in EU1 and the *in situ* midden probably ends a few meters south of the unit. The total extent of the Locus A midden is estimated as approximately 30 m north-south, from about N95 to N125, and about 20 m east-west, from about E45 to E65.

Locus B is comprised of the shell beach ridge running 110 m southeast-northwest, about 8-12 m wide, and the adjacent western flank of the bayou's submerged western levee. The southern end of the ridge is at N102 E3 and the northern end at N187 W67. This beach ridge is comprised almost entirely of *Rangia* shell; a small amount of oyster shell is also present. A few historic sherds and modern bricks were noted on the surface, but prehistoric sherds comprised the bulk of the surface

material. The sherds generally exhibited limited water-tumbling erosion, in contrast to the severely eroded sherds collected in the intermittent lakeshore scatters northwest and southeast of 16SB40.

No *in situ* midden was encountered in auger tests within the beach ridge. An auger test placed near the high tide mark close to the southern end of the shell ridge, at N122 E1 (AT6'), yielded small fragments of *Rangia* at depths of 64-72 cm. This represents *in situ* midden at a depth comparable to the depth of midden in Locus A. Auger tests placed south of here, between Locus B and Midden F of 16SB39, were negative.

At extreme low tide stage, an area of dense *Rangia* with sherds in pristine uneroded condition, evidently *in situ*, was exposed near the northern end of the shell ridge. This exposure extends north about 4 m from N185 W30. Sherds were scattered along the beach at low tide northwest to a small cape at N218 W58. West of that point the shoreline trended westward away from the bayou alignment and sherds were both less frequent and more severely eroded. It was not possible to auger between AT6' and the northern limit of *Rangia* exposure on the beach due to the infrequent low tide stages during summer fieldwork. The *in situ* midden in Locus B appears to be largely submerged in the lake. Dead tree trunks mark the levee crown forest on the submerged western levee of the channel bisecting 16SB40. The grove of dead trees crosses the shell ridge in the eastern half of Locus B and extends south to Midden F of 16SB39.

A vertical steel pipe rises from the beach in Locus B at N159.5 W36. This probably is the base of the Dupre (1934) USC&GS monument, but no identifying brass plaque remains on the steel pipe. This monument originally was set on the shore.

Locus C of 16SB40 is comprised of intermittent beach ridge scatters running northwest about 350 m from Shovel Test 35 (at N218 W93) to about N380 W350, 10 m west of Shovel Test 28. Throughout this area, the exposed shell is primarily *Rangia*, with oyster present in smaller amounts than was observed farther west in 16SB71. Small amounts of historic and modern artifacts (ceramics, glass, brick) are present in Locus C, but are less frequent than prehistoric sherds. All artifacts have suffered abrasion from water tumbling. No *in situ* midden was recorded in auger or shovel tests here, and all material appears to be redeposited by wave action on the beach or beach ridge. The presence of relatively

large sherds suggests that the artifacts have been transported only a short distance; they may have been swept off the submerged natural levee flanking the lateral bayou in 16SB40.

Excavation Unit at 16SB40

Figure 21 shows the location of the 1 x 1 m unit excavated at 16SB40. The unit was placed adjacent to AT7' which had indicated that buried, undisturbed cultural deposits were present at that location on the site. The unit datum (NE corner) was established so that it was level with ground surface, and excavation proceeded by arbitrary 10 cm levels. All soil was pushed by hand through 1/4-inch mesh. Water-screening techniques were not used.

Levels 1 through 3 (0-30 cm below surface) were sterile with the exception of small amounts of *Rangia*. Level 4 (30-40 cm) yielded three aboriginal sherds, while Level 5 was sterile. Level 6 (50-60 cm) yielded only a small fragment of *Rangia* shell. It was at this depth (60 cm below surface) that use of a pump became necessary. A sump was excavated in the NE portion of the unit to a depth of 90 cm. Soil from the sump was screened separately from soil removed from the remainder of the unit.

Small amounts of *Rangia* shell were observed within Level 7 (60-70 cm) which also yielded five aboriginal sherds. The number of sherds increased dramatically in Level 8 (70-80 cm) which yielded a total of 32. The quantity of faunal remains also increased. Level 9 yielded an even greater number (126) of sherds. At 75 cm below surface, the amount of *Rangia* shell had also increased. The highest shell concentration appeared to be within the southwest corner of the unit. In Level 9 (80-90 cm), the highest concentration of *Rangia* continued to be in the southwest corner. Shell density was generally higher in the western one-half of the unit than was the case in the eastern one-half.

In Level 10 (90-100 cm), very few *Rangia* were present. However, ceramic artifact density remained high (219 sherds). A sandstone artifact with polished surfaces (Figure 34) was also recovered from this level. Stratum VI, a 10YR 5/1 (gray) clay was encountered in the lowest three centimeters of Level 10. It appeared that artifact density was much lower within this stratum, which may represent pre-occupation natural levee soils.



Figure 34. Photograph of sandstone artifact from excavation unit at 16SB40.

The lithic artifact (Figure 34) from Level 10 was examined by Paul Heinrich. He identified the material as a ferruginated sandstone cemented with irons. An original joint break was observed, indicating the artifact maintained its natural shape. No evidence of shaping due to stream transport was observed. Rather, the artifact was shaped by grinding. It is likely that the source for the raw material was an actual outcrop. After removal, then, the lithic was hand-carried to 16SB40. The most likely source is a First Tertiary outcrop in the northern Florida Parishes of Louisiana, in the Tunica Hills, or in Mississippi. However, the raw material appears very similar to Miocene specimens from Alabama (Paul Heinrich, personal communication 1993). The artifact is evidence that during the Coles Creek Period, lithic materials were transported considerable distances to marsh sites in southeastern Louisiana.

In accordance with the Scope of Services for the project, excavation was halted at a depth of one meter below surface. In order to obtain data on stratigraphy at greater depths, an auger test was excavated in the floor of the unit to a depth of 170 cm. The auger test indicated that no additional cultural deposits were present to that depth.

Figures 35 and 36 are profiles of the east and west walls of the unit. The west wall profile shows that within the culture-bearing Stratum V, a lens of concentrated *Rangia* shell was present. It is important to note, however, that artifacts were not confined to the *Rangia* lens. In fact, only a very small amount of *Rangia* was present in Level 10 of the unit but, in contrast, this level yielded the greatest number of sherds.

Stratum VI, as was noted above, consisted of 10YR 5/1 clay. It was first encountered near the floor of the unit within Level 10. Artifact density within Stratum VI appeared to decline relative to the density observed in Stratum V. Stratum VI continued in the auger test to a depth of 170 cm. No additional artifacts were recovered. These observations regarding reduced artifact density in Stratum VI, as well as the depth below surface to which it extends, suggest that this gray clay represents sterile natural levee soil which was present prior to the occupation of this portion of 16SB40.

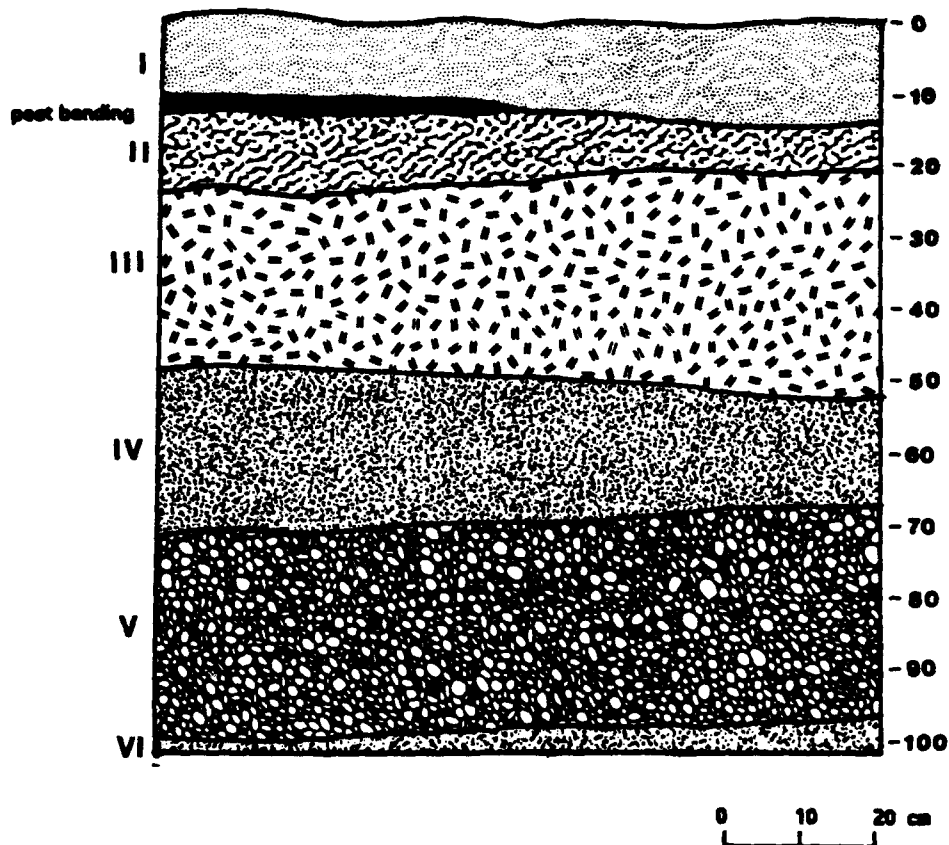


Figure 35. Profile of the east wall of excavation unit at 16SB40.

Stratum I	10YR 2/1 (very dark brown) silty loam with 10YR 2/1 (black) peat banding
Stratum II	Bands of sand and peat within 10YR 2/2 (very dark brown) silty loam
Stratum III	10YR 4/1 (dark gray) silty clay with dark brown mottling
Stratum IV	7.5YR 4/0 (dark gray) silty clay
Stratum V	7.5YR 3/0 (very dark gray) silty loam
Stratum VI	10YR 5/1 (gray) clay

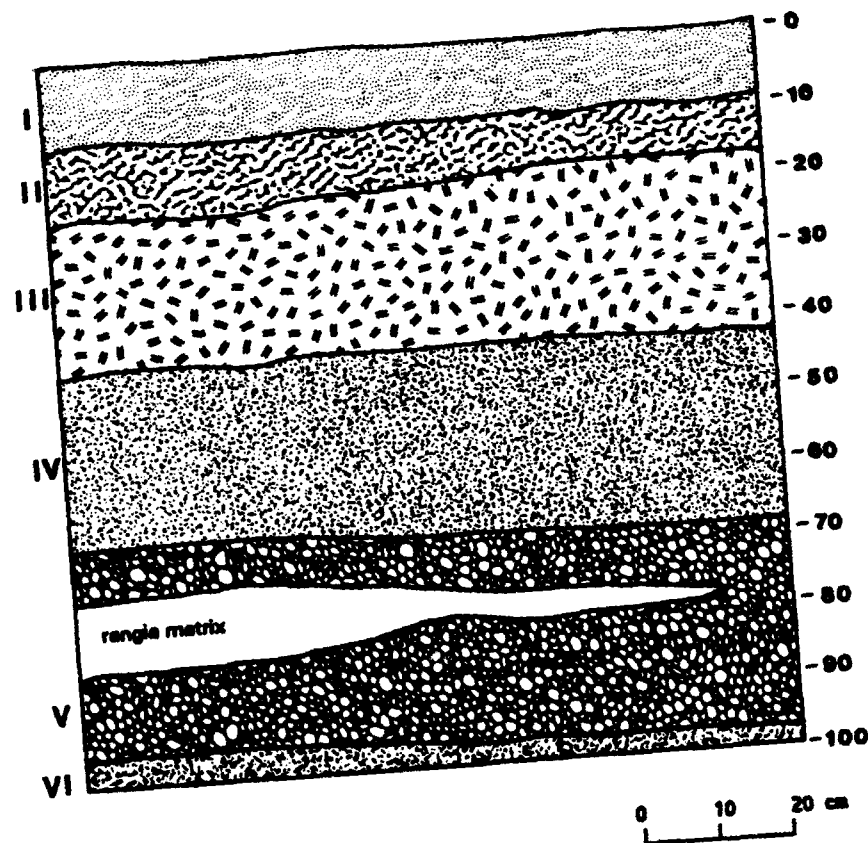


Figure 36. West wall of excavation unit at 16SB40.

Stratum I	10YR 2/2 (very dark brown) silty loam with bands of 10YR 5/3 (brown) sand
Stratum II	10YR 2/2 (very dark brown) silty loam with bands of 10YR 5/3 (brown) sand
Stratum III	10YR 4/1 (dark gray) silty clay
Stratum IV	7.5YR 4/0 (dark gray) silty clay
Stratum V	7.5YR 3/0 (very dark gray) silt loam
Stratum VI	10YR 5/1 (gray) clay

Faunal Remains

Faunal remains from the excavation unit at 16SB40 were examined in the same manner as those from the units at 16SB39. Results are summarized in Table 9. As was the case at 16SB39, the occupants' diet included fish as well as small and large mammals. Muskrat appear to have been an important dietary component.

A comparison of Tables 4 and 9 shows that the three levels in which artifacts were concentrated in the unit at 16SB40 yielded almost twice as much faunal material (by weight and number of specimens) as did all ten levels of Excavation Unit 3 at 16SB39. In contrast, soil within the former unit is best characterized as *Rangia* midden while the culture-bearing levels at 16SB40 had much less shell. A similar difference was observed at 16SC27 (the Pump Canal Site) where the density of vertebrate faunal remains was highest in levels with reduced shell density (Franks et al. 1993). This comparison between 16SB39 and 16SB40 appears to suggest different functions for the former site and those portions of the latter site that remain preserved. At 16SB39, *Rangia* were far more important than at 16SB40 which may represent a camp associated with fishing, trapping, and hunting but where the harvesting of *Rangia* was a relatively unimportant activity.

Prehistoric Ceramics (by T. R. Kidder)

Prehistoric ceramics were recovered from the 1 x 1 m unit, auger tests, shovel tests, and surface collections (Tables 10 and 11, Figures 37-42). Results of analysis of the sherds suggests that 16SB40 represents a Coles Creek and a Late Mississippi period occupation. The majority of the aboriginal ceramics from 16SB40 came from the test excavation, which yielded a large number (389) of sherds, some of which were sufficiently diagnostic to allow for a reasonable phase attribution during the Coles Creek period. The late Mississippi period component was noted only in the shovel tests and surface collections, and the amount of material was too small as to support any conclusions regarding this later occupation (Table 10).

Sherds in the Excavation Unit. Although Excavation Unit 1 was dug to a depth of 100 cm, cultural deposits were largely isolated in Stratum V, a very dark gray silty loam (Figures 35 and 36). Most of the pottery can be classified as Baytown Plain, var. *unspecified* (Table 10). This plain pottery was coarsely tempered, with

Table 9. Summary of Faunal Remains from the Excavation Unit at 16SB40.

Provenience	# Specimens	Wt (gms)	Comments
L4	2	1.1	fish; unidentified
L8	25	39.3	muskrat; unidentified large mammal; unidentified small mammal; fish; unidentified
L9	180	205.8	muskrat; opossum; raccoon; unidentified small mammal; fish; unidentified large mammal; possible alligator; unidentified
L10	251	128.1	muskrat; opossum; unidentified small mammal; fish; alligator; unidentified

Table 10. Ceramic artifacts from 16SB40 Excavation Unit

	Level 4			Level 7		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified					2	2
Baytown Plain. var. Unspec., (<1/4")		3	3		2	2
Pontchartrain Check Stamped, var. Pontchartrain					1	1
Total Ceramics		3	3		5	5

Table 10 (continued). Ceramic artifacts from 16SB40 Excavation Unit

	Level 8			Level 9		
	Rim	Body	Total	Rim	Body**	Total
Ceramics						
Baytown Plain, var. Unspecified	1	27	28	8	88	96
Baytown Plain, var. Unspec., (<1/4")					21	21
Chevalier Stamped, var. Unspecified	1		1			
Coles Creek Incised, var. Unspec.				3	3	6
French Fork Incised, var. Unspec.					1	1
Mazique Incised, var. Unspecified					1	1
Pontchartrain Check Stamped,						
var. Pontchartrain		1	1		1	1
Unclass. Incised on Baytown						
Plain, var. Unspecified		1	1			
Unclass. Incised and Punctated on						
Baytown Plain, var. Unspecified	2	1	1			
Total Ceramics		30	32	11	115	126

Table 10 (continued). Ceramic artifacts from 16SB40 Excavation Unit

	Level 8	Level 9
Rims		
Bowls: Thickened Rim, Simple, Round Lip ("Onion Lake" [IIA])		
Thickened Rim, Simple, Flat Lip ("Onion Lake" [IIA])	1	1
Unmodified Rim, Simple, Round Lip ("Salt Mine Valley" [IA])	1	2
Interior Thickened Rim, Flat Lip, Exterior Flange		1
Irregular Rim, Triangular Lug, Round Lip		1
Jars: Unmodified Rim, Simple, Round Lip ("Salt Mine Valley" [IA])		1
Tapered Lip, Exterior Strap		2
Plate: Simple, Round Lip With Interior Zoning Line		1
Indeterminate: Simple, Round Lip		2
Total Rims	2	11

**Nine sherds from Level 9 and one sherd from Level 8 join to form an entire round, flat base and portions of side wall of large vessel, probably a jar.

Table 10 (continued). Ceramic artifacts from 16SB40 Excavation Unit

Ceramics	Level 10			Sump (90-100 cm)		
	Rim	Body	Total	Rim	Body**	Total
Baytown Plain, var. Unspecified	6	93	99		1	1
Baytown Plain, var. Unspec., (<1/4")		101	101		3	3
Evansville Punctated, var. Unspec.*	2	11	13			
Mazique Incised, var. Unspecified	1	1	2			
Unclass. Incised on Baytown						
Plain, var. Unspecified	2	2	4			
Total Ceramics	11	208	219		4	4
Rims						
Bowls: Thickened Rim, Simple, Round Lip						
("Onion Lake" [IIA])			1			
Jars: Thickened Rim, Simple, Round Lip						
("Onion Lake" [IIA])			1			
Flaring Rim, Simple, Round Lip			3			
Indeterminate: Simple, Round Lip			3			
Simple, Flat lip			3			
Total Rims			11			

*Probably all from the same vessel.

Table 10 (continued). Ceramic artifacts from 16SB40 Excavation Unit

	Total	
	Body	Total
Ceramics		
Baytown Plain, var. Unspecified	211	226
Baytown Plain. var. Unspec., (<1/4")	130	130
Chevalier Stamped, var. Unspecified	1	1
Coles Creek Incised, var. Unspec.	3	6
Evansville Punctated, var. Unspec.	11	13
French Fork Incised, var. Unspec.	1	1
Mazique Incised, var. Unspecified	2	3
Pontchartrain Check Stamped, var. Pontchartrain	3	3
Unclass. Incised on Baytown Plain, var. Unspecified	3	5
Unclass. Incised and Punctated on Baytown Plain, var. Unspecified	1	1
Total Ceramics	365	389

Table 10 (continued). Ceramic artifacts from 16SB40 Excavation Unit

	Total
Rims	
Bowls: Thickened Rim, Simple, Round Lip	
("Onion Lake" [IIA])	3
Thickened Rim, Simple, Flat Lip	
("Onion Lake" [IIA])	2
Unmodified Rim, Simple, Round Lip	
("Salt Mine Valley" [IA])	1
Interior Thickened Rim, Flat Lip,	
Exterior Flange	1
Irregular Rim, Triangular Lug,	
Round Lip	1
Jars: Unmodified Rim, Simple, Round Lip	
("Salt Mine Valley" [IA])	1
Thickened Rim, Simple, Round Lip	
("Onion Lake" [IIA])	1
Flaring Rim, Simple, Round Lip	3
Tapered Lip, Exterior Strap	1
Plate: Simple, Round Lip With Interior	
Zoning Line	1
Indeterminate: Simple, Round Lip	5
Simple, Flat Lip	3
Total Rims	24

Table 11. Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

	A.T.1'			A.T.5'		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified		1	1		1	1
Baytown Plain, var. Unspec. (<1/4")		1	1		2	2
Total Ceramics		2	2		3	3

Table 11 (continued). Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

Ceramics	A.T. 7'			Locus A		
	Rim	Body	Total	Midden Surface	Body	Total
Baytown Plain, var. Unspecified						
Coles Creek Incised, var. Unspec.	1		1	1	7	8
Total Ceramics	1		1	1	7	8
Rims						
Jars: Unmodified Rim, Simple, Round Lip			Total			Total
("Salt Mine Valley" [IA])			1			
Everted Rim, Round Lip						
Total Rims			1			1

Table 11 (continued). Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

Ceramics	Locus A			Locus B		
	Rim	Surface	Body	Rim	Surface	Body
Baytown Plain, var. Unspecified	6		12	2		8
Coles Creek Incised, var. Unspec.				1		
French Fork Incised, var. Unspec.				1		
Total Ceramics	6		12	4		8
		Total	18		Total	12
Rims						
Bowls: Thickened Rim, Round Lip						
("Onion Lake" [IIA])						
Interior/Exterior Flange, Flat Lip						
Jars: Thickened Rim, Round Lip						
("Onion Lake" [IIA])						
Plate: Exterior Beveled Rim, Interior Notches						
Indeterminate: Round Lip						
Total Rims						
		Total	1			1
			3			1
						2
			2			2
			6			4

Table 11 (continued). Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

		Locus A Beach		S.T.28	
		Rim	Body	Total	
Ceramics					
Baytown Plain, var. <u>Unspecified</u>		1	2	3	
Total Ceramics		1	2	3	
Rims				Total	
Jars:	Unmodified Rim, Round Lip				
	("Salt Mine Valley" [IA])			1	
Total Rims				1	
					Total
					4
					4

Table 11 (continued). Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

	S.T.33	S.T.32-33
Ceramics		
Baytown Plain, var. <u>Unspecified</u>	Rim	Rim
Unclass. Incised on Baytown		Surface
Plain, var. <u>Unspecified</u>	1	Body
Total Ceramics	1	Total
		1
Rims		Total
Jars: Thickened Rim, Round Lip		
("Onion Lake" [IIA])		
Indeterminate: Round Lip		1
Total Rims		Total
		1

Table 11 (continued). Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

	S.T.32-33		S.T.36-37	
	Rim	Supplemental Body	Rim	Surface Body
Ceramics				
Baytown Plain, var. <u>Unspecified</u>			1	
Unclass. Incised on Baytown Plain, var. <u>Unspecified</u>		1		
Mississippi Plain, var. <u>Pomme d'Or</u>		1	1	
Total Ceramics			2	
				Total
				1
Rims				
Jars: Everted Rim, Round Lip				1
Everted Rim, Irregular, Round Lip				1
Total Rims				2

Table 11 (continued). Ceramic Artifacts from 16SB40 Shovel Tests and Surface Collection

	Locus A			0--15 m E of S.T.39			Total		
	Rim	Body	Total	Rim	Body	Total	Rim	Body	Total
Ceramics									
Baytown Plain, var. Unspecified	6						18	36	54
Baytown Plain, var. Unspec. (<1/4")		1						3	3
Coles Creek Incised, var. Unspec.							2		2
French Fork Incised, var. Unspec.							1		1
Unclass. Incised on Baytown Plain, var. Unspecified								1	1
Mississippi Plain, var. Pomme d'Or							2		2
Total Ceramics	6	1	7				23	40	63
Rims									
Bowls: Thickened Rim, Round Lip									
("Onion Lake" [IIA])									1
Thickened Rim, Round Lip, Line Below Lip ("Legge" [IIB1])									2
Interior/Exterior Flange, Flat Lip									1
Jars: Unmodified Rim, Simple, Flat Lip									
("Salt Mine Valley" [IA])									2
Everted Rim, Round Lip									2
Thickened Rim, Round Lip									
("Onion Lake" [IIA])									4
Everted Rim, Irregular, Round Lip									1
Thin, Everted Rim, Round Lip									2
Plate: Exterior Beveled Rim, Interior Notches									1
Indeterminate: Round Lip									6
Tapered Lip									1
Total Rims			6						23

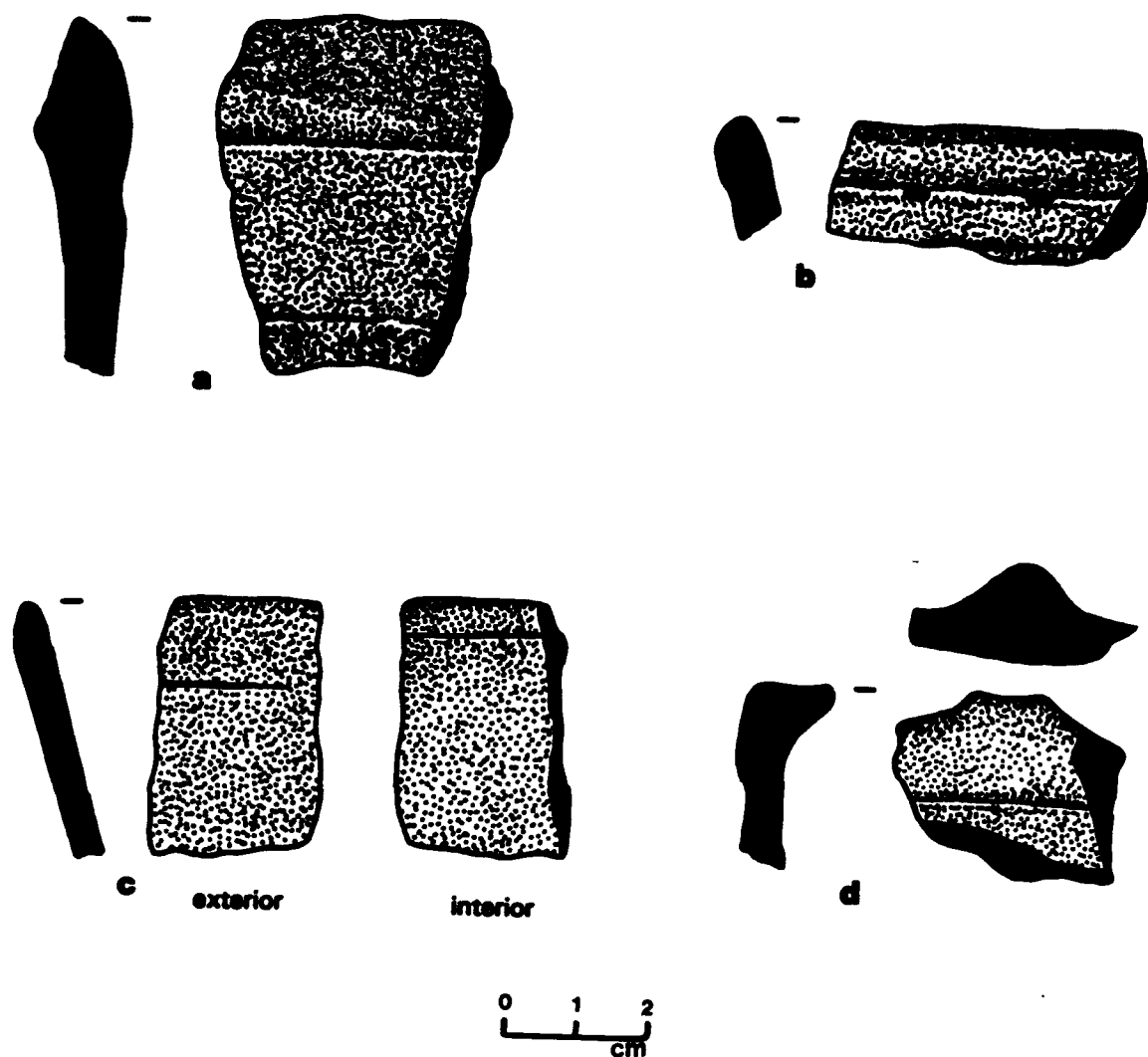


Figure 37. Selected rims and decorated sherd from excavation unit Level 9 at 16SB40 (Scale 1:1). A) Coles Creek Incised, var. *Unspecified*; b) simple, round lip; c) unmodified rim, simple, round lip ("Salt Mine Valley" [IA]); d) irregular rim, triangular lug, round lip.

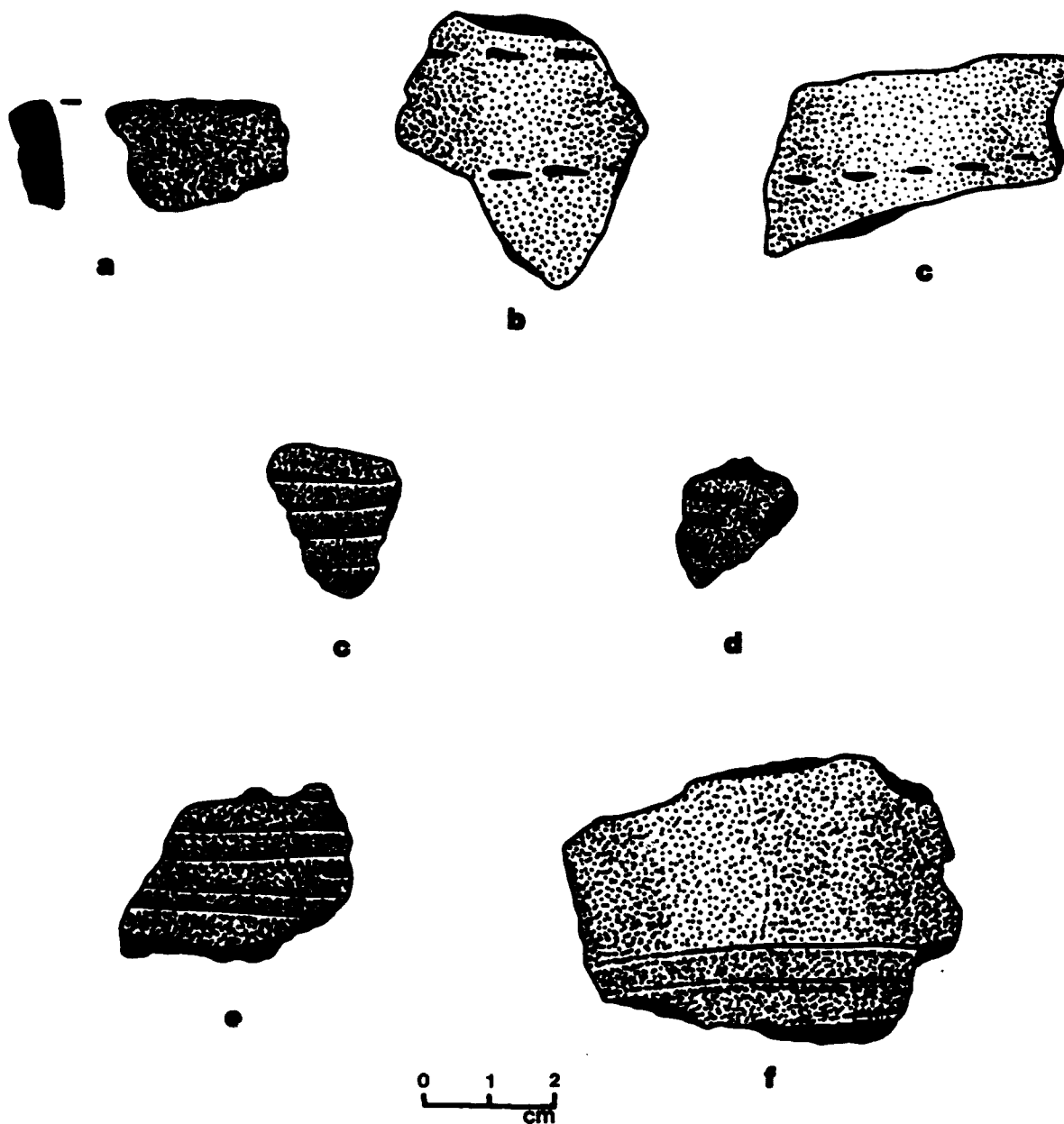


Figure 38. Selected rim and decorated sherds from excavation unit at 16SB40 (Scale 1:1). Proveniences: a-d) Level 10 and e,f) Level 9. A-c) Evansville Punctate, var. *Unspecified* - a) simple, round lip; d,e) Mazique Incised, var. *Unspecified*; f) Coles Creek Incised, var. *Unspecified*



Figure 39. Selected decorated rims from excavation unit at 16SB40 (Scale 1:1). A) Mazique Incised, var. *Unspecified* - simple, round lip (Level 10); b) Unclassified Incised on Baytown Plain, var. *Unspecified* - flaring rim, simple, round lip (Level 10); c) Chevalier Stamped, var. *Unspecified* - unmodified rim, simple, round lip (Level 8).

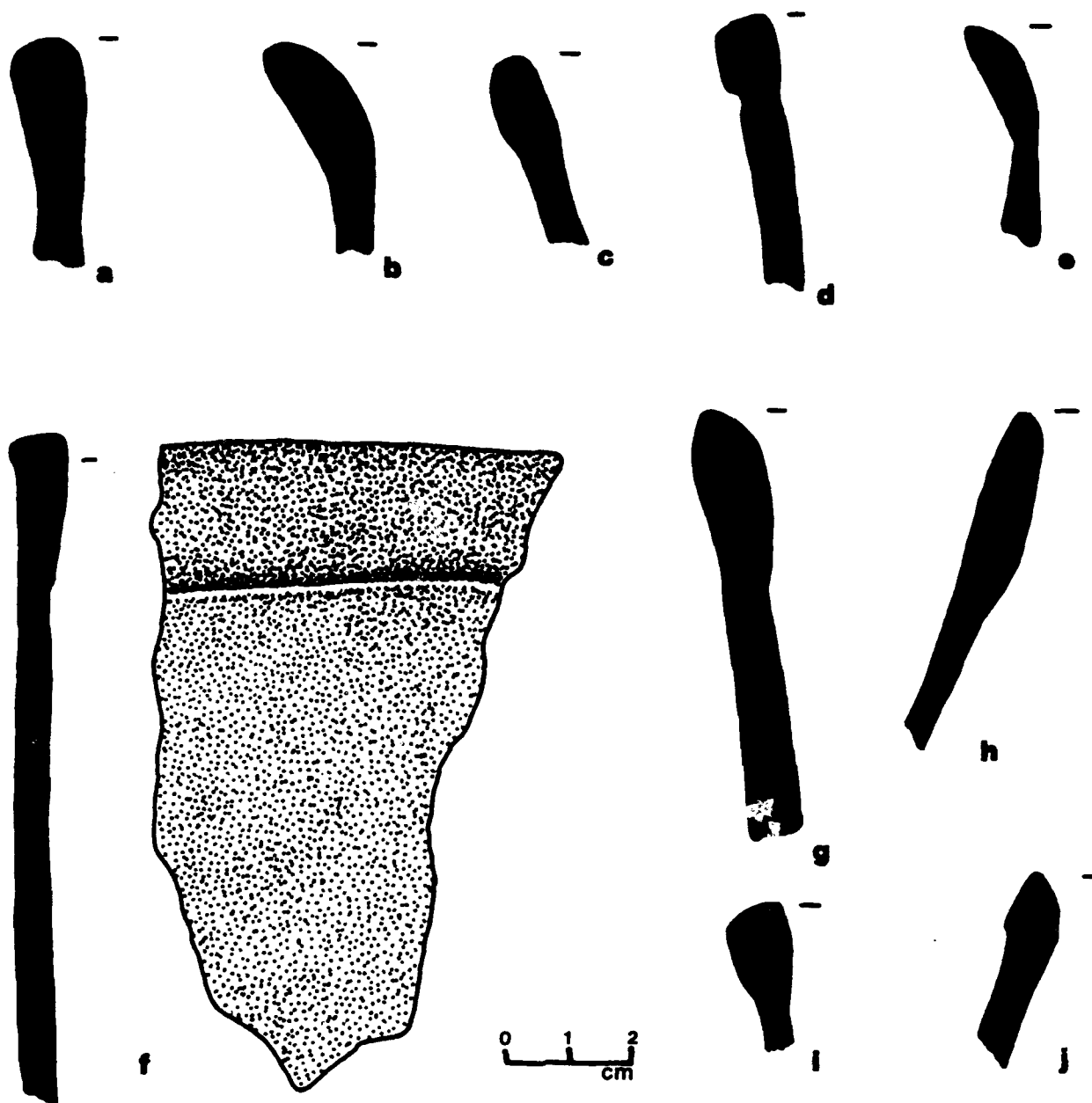


Figure 40. Selected rims from excavation unit at 16SB40 (Scale 1:1). Proveniences : a) Level 8; b,c) Level 10; d-j) Level 9. A) thickened rim, simple, round lip ("Onion Lake" [IIA]); b) flaring rim, simple, round lip; c) thickened rim, simple, round lip ("Onion Lake" [IIA]); d) tapered lip, exterior strap; e) interior thickened rim, flat lip, exterior flange; f) simple, round lip, with interior zoning line; g) thickened rim, simple, flat lip ("Onion Lake" [IIA]); h) thickened rim, simple, round lip ("Onion Lake" [IIA]); i) thickened rim, simple, flat lip ("Onion Lake" [IIA]); j) simple, round lip.

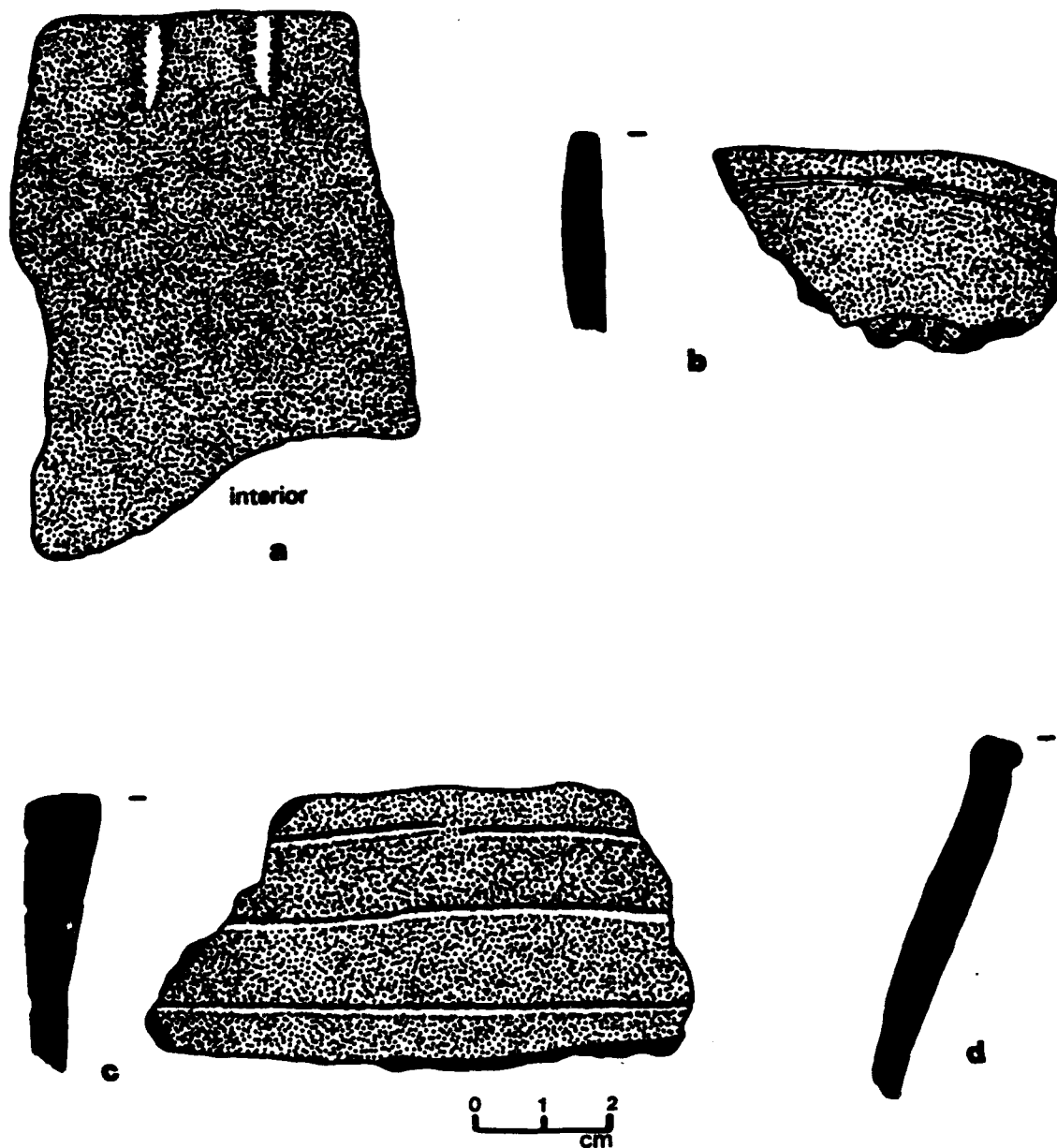


Figure 41. Selected rims and decorated rims from 16SB40 Locus B surface collection (Scale 1:1). A) exterior beveled rim, with interior notches (rim was too eroded to profile); b) French Fork Incised, var. *Unspecified* - round lip c) Coles Creek Incised, var. *Unspecified* - round lip; d) interior/exterior flange, flat lip.

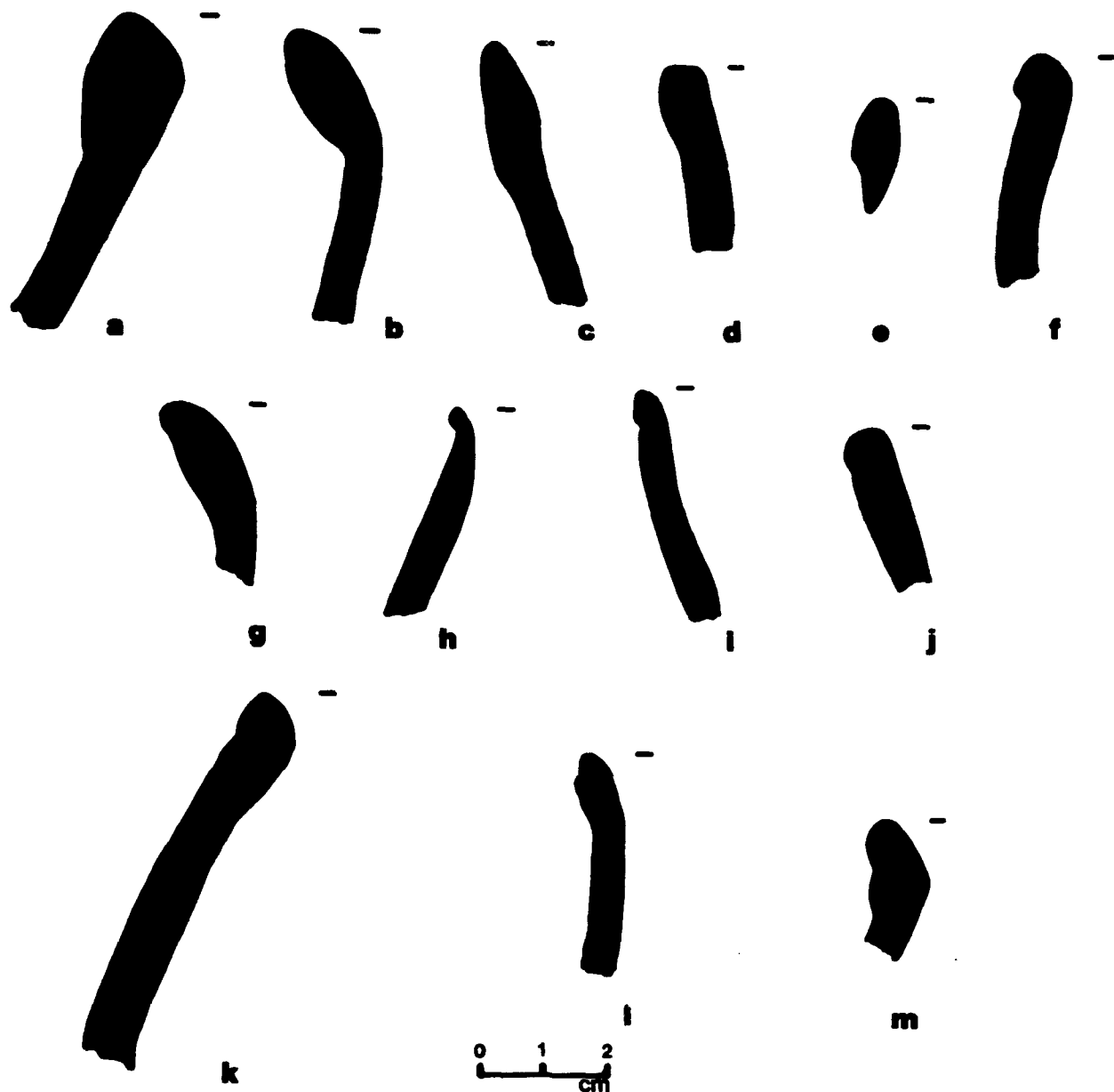


Figure 42. Selected rims from 16SB40 surface collection and auger test (Scale 1:1). Proveniences: a-f) Surface Collection; g-j) Locus A Midden Surface Collection ST39 - 15m E of ST39; k) Locus A; l) Locus C Surface ST32 - ST33; m) AT-7 (75 - 90 cm bs). A-d) thickened rim, round lip ("Onion Lake" [IIA]); e,f) round lip; g) thickened rim, round lip ("Legge" [IIB1]); h) thin, everted rim, round lip; i) thickened rim, round lip ("Legge" [IIB1]); j) round lip; k) unmodified rim, simple, round lip ("Salt Mine Valley" [IA]); l) thickened rim, round lip ("Onion Lake" [IIA]); m) Coles Creek Incised, var. Unspecified - unmodified rim, simple, round lip ("Salt Mine Valley" [IA]).

large grog particles, and had a soft, chalky finish. In most regards the plain pottery from 16SB40 was indistinguishable from that recovered in excavations at 16SB39. It would appear that the plain ware from 16SB40 is slightly thinner, perhaps a bit harder, and somewhat better made than that from 16SB39. These differences, however, are both impressionistic, and more significantly, they are variable from sherd to sherd.

Rim modes are somewhat more diagnostic at 16SB40 than at 16SB39 for several reasons. First, the sample is larger, and thus more adequate for generalization; and second, more work has been done on Coles Creek period rim and vessel modes, thus allowing for more confidence in interpretation. The most common rim mode consisted of a slightly thickened rim with a simple round, or simple flat lip. Elsewhere in the coastal plain this combination is referred to as the "Onion Lake" rim mode, at least when found in association with certain decorated types (Brown 1982: 50-51). This mode is also identified as mode IIA1b and IIA2b (Brown 1982: 51, Fig. 33). This rim mode is found on both jars and bowls, although it is slightly more common on bowls

Another common mode at 16SB40 is the unmodified (or "direct") rim with a simple, usually round lip. This is often identified with "Salt Mine Valley" rim mode, and is also designated as mode IA (Brown 1982: 50-51). This mode too is found on both jars and bowls.

A single rim with a small triangular tab or lug was found in the collection, as were examples of bowls with exterior flanges, and jars with both thickened and flaring rims (Table 10). Several jars with tapered lips were found in the excavations at 16SB40. These cannot be identified as the "Vicksburg" rim mode (Phillips 1970: Fig. 183), although they do bear a strong resemblance. A single plate fragment was recovered with a thin line on the interior directly below the lip.

A number of sherds (from levels 8 and 9) combined to form the base and parts of the side walls of a large vessel (Figure 43 and Table 10). The base is round and flat, with curved wall-base junction. This pattern of curved wall-base junction was noted in several other sherds which could not be truly classified as base fragments, and thus might appear to be a predominant characteristic of vessel shape (for at least some functional vessel classes).



Figure 43. Reconstructed bowl from excavation unit at 16SB40.

The most diagnostic ceramic artifacts were, of course, the decorated sherds. All of the decorated sherds point to a Coles Creek period date. Single sherds of Chevalier Stamped and French Fork Incised help to demonstrate the Coles Creek period date. A large sample of Evansville Punctated pottery was recovered. These sherds are probably from one, or at most, two vessels, and consist of widely spaced linear bands of small punctations. A small number of unclassified Coles Creek Incised sherds, in combination with the other decorated types, also point to a Coles Creek period occupation. At least one of the sherds had a band of punctations within an incision arranged around the rim, a treatment characteristic of Coles Creek Incised, var. Athanasio (Brown in press; Fuller and Fuller 1987; Wiseman et al. 1979). These Coles Creek Incised sherds were too small, however, to classify to any specific variety. The presence of Mazique Incised sherds also points to a Coles Creek age for the assemblage, and this is confirmed by the presence of Pontchartrain Check Stamped, var. Pontchartrain. The sum of these data point to a Bayou Cutler phase occupation.

Auger/Shovel Tests, Surface Collections. The various auger tests and shovel tests, as well as surface collections from 16SB40, yielded fewer sherds than the unit (Table 11), and not surprisingly, provided little additional information. Still, examination of Table 11 shows that these various recovery procedures yielded data which basically confirm the information and conclusions from Excavation Unit 1. The rim modes are characteristic of a Coles Creek occupation, especially modes classified as IA ("Salt Mine Valley"), IIA ("Onion Lake"), and IIB ("Legge") (Brown 1982: Fig. 33). The plate with interior notches is interesting but not especially diagnostic. Deep lip notching is frequently associated with Baytown period occupations, but the plate form is very rare in these earlier contexts.

The decorated pottery from the auger and shovel tests, as well as surface collections, is not especially helpful beyond demonstrating the presence of a Coles Creek occupation. The presence of several sherds of Mississippi Plain, var. Pomme d'Or is interesting in that it points to a late period, probably Bayou Petre phase, occupation (Weinstein 1987). An occupation in the later Mississippi period is not especially surprising since the region was apparently well populated at this time.

Discussion and Dating of the Site. The results of ceramic analysis at 16SB40 show that the majority of diagnostic artifacts can be dated to the Bayou Cutler phase of the Coles Creek period. Bayou Cutler is, however, a temporally broad phase which is in need of further subdivision (Weinstein 1987; Wiseman et al. 1979:4/10). The ceramics from Excavation Unit 1 at 16SB40 are not sufficiently diagnostic of any one temporal subdivision, since they could date anywhere in the Coles Creek period sequence as it is known in the Mississippi River Delta. Other than the very specific Mississippian presence, however, 16SB40 is a single component occupation; as such, additional excavated material from the site could be extremely useful for further defining the scope and chronology of Coles Creek period culture in the eastern Delta region.

Historic Artifacts (by Jill-Karen Yakubik)

A small number of historic artifacts were collected at 16SB40 (Table 12). One sherd of a plain pattern creamware soup plate was recovered from the surface between Shovel Tests 36 and 37. In addition, a fragment of a blue shell-edged pearlware plate was collected between Shovel Tests 32 and 33. This latter sherd had a slight concavity to the marly, suggesting that it was manufactured after 1800. A small amount of corroded metal was also found in this area. In addition, a light green glass T-shaped bottle stopper was collected from the surface between Shovel Tests 31 and 32. Finally, small brick fragments were noted on the surface of the site, and a few fragments were collected in Shovel Test 32. All of the material was water worn.

With the exception of the ceramics, the collection of historic material from 16SB40 was non-diagnostic. The creamware and pearlware, however, suggest the presence of an ephemeral early-nineteenth-century occupation. They may be related to activity at nearby Tower Dupre. However, it is tempting to interpret these remains as deriving from a maroon settlement, of which there were a number on Lake Borgne. In any event, they probably derive from an early-nineteenth-century camp, regardless of the ethnicity of the former occupants.

Table 12. Historic Artifacts from 16SB40.

LOCUS B

Surface Between Shovel Tests 36 and 37

1 creamware (plain rim)

LOCUS C

Surface Between Shovel Tests 31 and 32

1 light green, T-shaped bottle stopper

Shovel Test 32

193.2 grams brick

Surface Between Shovel Tests 32 and 33

1 blue shell-edged pearlware (nineteenth century,
concave rim)

14.8 grams of metal

CHAPTER 10
SITE 16SB140

Location and Description

This site had not been reported previously. It was discovered during bankline survey of Shell Beach Bayou. The site is a discrete shell midden on the south bank of Shell Beach Bayou, west of the continuous subsurface *Rangia* constituting Middens C, D, and E at 16SB39. The *Rangia* is visible just below the water's surface during extremely low tide stages, when it is exposed in the eroding bayou bank. The shell is exposed at W360-364 and W393-442, from N25 to N30 (Figures 21 and 44).

Several submerged tree stumps are visible near the edge of the bank. The extent of erosion along the bayou bankline cannot be determined. Positive auger tests were located at N24 W410 and N27 W393 during initial bankline survey, and at N20 W425 during site definition. Auger tests farther east along the bayou were negative. The observed spatial separation between the westernmost midden recorded at 16SB39 (in AT27 at N16 W255) and the bankline exposure at W360 is 135 m. Due to the proximity of this site to 16SB39, it was plotted on the same grid map (Figure 21). A permanent benchmark was placed at N25 W300.

Site 16SB140, based on bankline exposure and auger tests, is a narrow, linear *Rangia* midden approximately 82 m in east-west (parallel to the bayou) extent. The vertical extent of the buried midden indicates that the site probably represents a relatively brief occupation.

Excavation Unit

A 1 x 1 m unit was placed near the eastern end of the main shell exposure at this site, close to the bankline. The southwestern corner of the unit was placed at N26 W391 (Figures 21 and 44). All soil was water-screened through 1/4-inch mesh.

The unit datum was established in the southwest corner at 10 cm above ground surface. Excavation proceeded by arbitrary 10 cm levels. Thus, Level 1 extended from 10-20 cm below datum or 0-10 cm below surface. Depths reported here are relative to the surface rather than relative to datum since the datum was arbitrarily set in the field.

Only a very few sherds and bone fragments were recovered from Level 1 (0-10 cm below surface). Artifact density was also light in Level 2 (10-20 cm below surface).

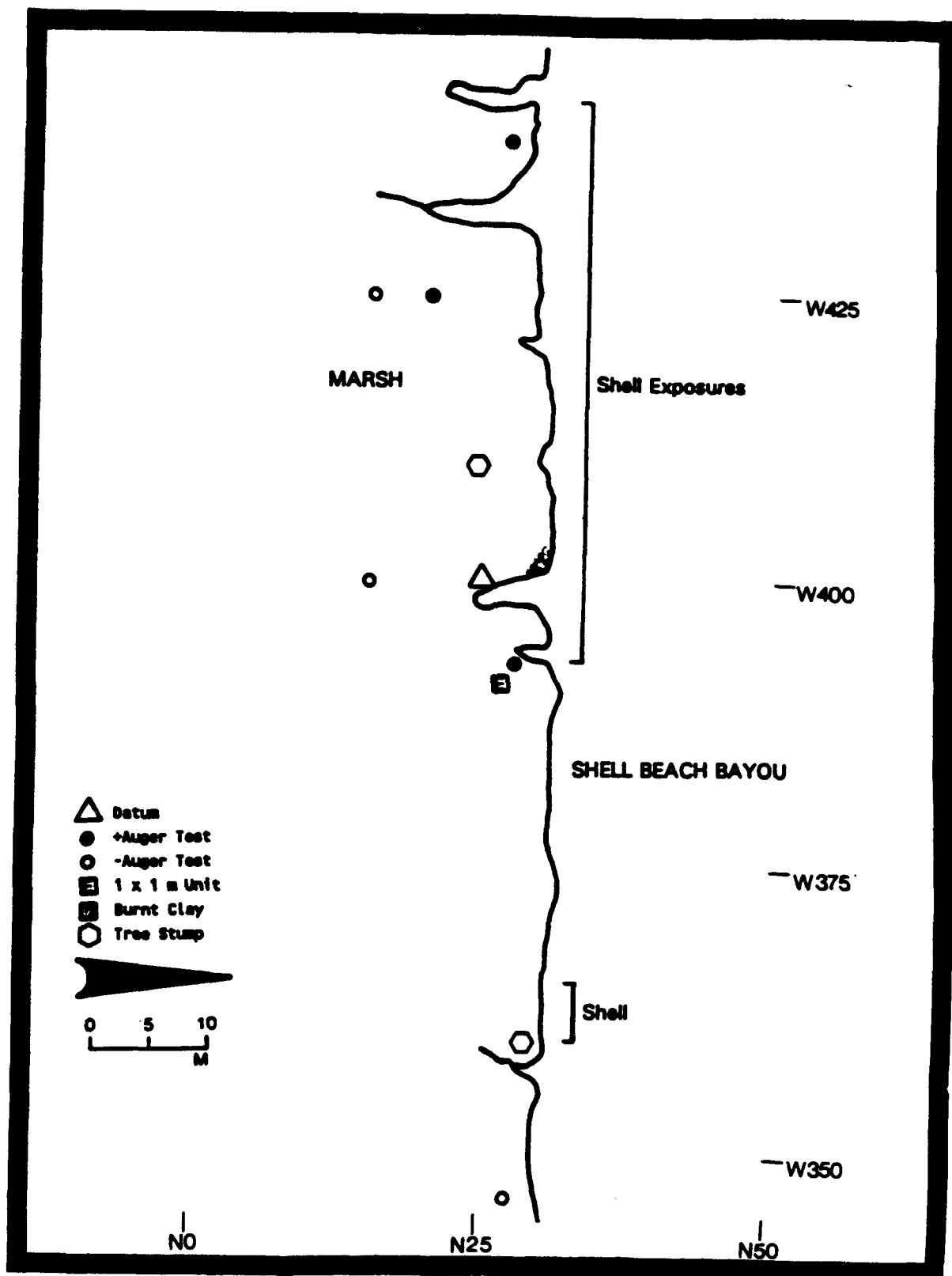


Figure 44. Detailed site map of 16SB140.

However, chert flakes were present in this and the underlying level. Primary and secondary flakes were recovered indicating that gravel had actually been brought to the site and then reduced. Bifacially worked, small pieces of gravel were also present. Evidence of actual lithic reduction is unusual on sites in the Delta area. It is particularly interesting in the case of 16SB140 because the two neighboring sites yielded lithic artifacts of a different nature and utilized for a different purpose (Chapters 9 and 10). It is also interesting that there was an inverse correlation between the number of lithics in the culture-bearing levels of this unit relative to the number of sherds and Rangia shells.

Within Level 4 (30-40 cm below surface), a new stratum was encountered. It was first noted at 35.5 to 36.5 cm below surface because of a concentration of Rangia shell. Because of the dramatic break within the level, artifacts from above the new stratum ("Level 4 Above Rangia") were kept separate from those recovered from within the stratum and below it.

The number of sherds and the quantity of faunal remains was greatly increased in Level 5 (40-50 cm below surface). Interestingly, the quantity of lithic debitage was reduced relative to levels above. Fill in this level was estimated to be comprised of approximately fifty percent shell and fifty percent clay.

During the excavation of Level 6 (50-60 cm below surface), it became apparent that 50 cm represented the lowest depth of most of the shell and artifacts. Level 7 (60-70 cm below surface) yielded only two sherds and a very small amount of bone. However, the floor of the unit was extremely mucky, and the south wall of the unit had begun to collapse. Conditions in the unit made it impossible to determine whether the two sherds and the bone represented material that had been dragged down during an effort to clean and maintain the wall. Because of conditions in the unit and because the artifact content was so greatly reduced, excavation was terminated. An auger test was placed in the floor of the unit to a depth of 180 cm below datum. It indicated that only sterile clayey silt (identical to Stratum IV in the unit) was present to that depth. Results of this unit, in terms of depth of shell and cultural materials, were consistent with observations based on the auger tests which had been excavated earlier.

Figure 45 is a profile of the west wall of the unit at 16SB140. It shows the four strata that were observed. Stratum III was a silty midden soil with Rangia. The

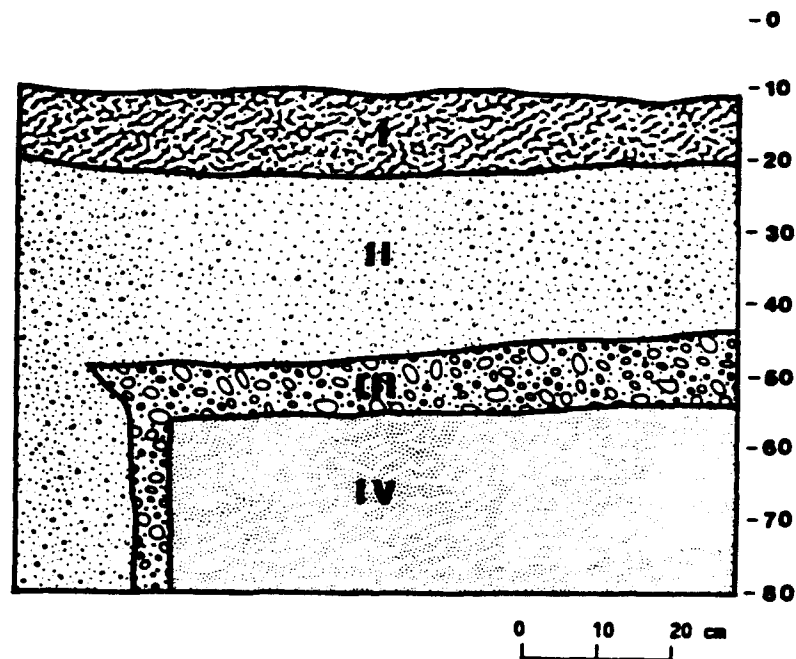


Figure 45. Profile of the north wall of the excavation unit at 16SB140.

KEY

- | | |
|-----|--|
| I | 10YR 3/1 (very dark gray) clayey silt with
10YR 3/6 (dark yellowish brown) mottling |
| II | 2.5Y 3/0 (very dark gray) silty clay with
small amounts of iron oxide mottling |
| III | Rangia midden in a 2.5Y 2/0 (black) silty
midden matrix |
| IV | 2.5Y 3/0 (very dark gray) clayey silt |

stratum does not extend all the way to the northwest corner of the unit. This was consistent with observations in the north wall (not profiled). The conservative explanation for the intrusive column of Stratum III material into Stratum IV is that it represents an animal burrow rather than a postmold. Because the sump was in this corner of the unit, the possible feature was not noted until the west wall was cleaned for profiling.

Shell from the unit provided an uncalibrated radiocarbon date of 640 ± 80 BP. Using correction factors designed by Stuiver and Pearson (1986), the date ranges within two standard deviations are A.D. 1255-1429. This date indicates that the site represents a Plaquemine period occupation. The date is consistent with the minimal amount of sediment overlying the cultural deposits.

Faunal Remains

Faunal material collected from the unit at 16SB140 was analyzed using the same methods as were applied to the collections from 16SB39 and 16SB40. Table 13 summarizes the results. The table shows that faunal material was concentrated in Level 5, which was also the level with the greatest number of sherds. It is possible that mammalian remains predominate over fish in this unit. However, a detailed analysis of Minimum Number of Individuals and biomass for a larger sample would be necessary to confirm this preliminary observation.

Table 13. Summary of Faunal Remains from the excavation unit at 16SB140.

Provenience	# Specimens	Wt (gms)	Comments
L1	1	1.1	unidentified
L2	3	0.4	unidentified
L4	8	5.2	fish; unidentified
L5	90	89.4	predominantly unidentified small mammal; unidentified large mammal; muskrat; fish; unidentified
L6	23	8.9	predominantly fish; unidentified
L7	3	1.1	unidentified

Prehistoric Artifacts (by T.R. Kidder)

Ceramics. Results of this excavation were both frustrating and intriguing. A small sample of Baytown Plain pottery was recovered from undisturbed contexts (Tables 14 and 15). No decorated pottery was recovered, and the small number of rims (Tables 14, 15, and Figure 46) cannot make up for the lack of diagnostic material. The rims are notable for including several shapes that are generally (but not exclusively) characteristic of Coles Creek period occupations. These include a bowl with a thickened rim and round lip (rim mode IIA) and an irregular rim with a small lug or peak. A series of rim fragments from Levels 5 and 6 were found to join to form approximately 1/3rd of a medium sized open bowl.

The plain pottery from Excavation Unit 1 was not especially diagnostic. The paste was coarse, with large, visible grog temper, and the surface was rough and chalky to the touch. Since most of the plain pottery consisted of small fragments (less than 1/4") it is difficult to assess the potential of this ware for providing chronological clues. Interestingly, very light brushing was observed on a number of sherds from the site. This appears to have been done with some sort of vegetation. The brushing does not appear to represent a decorative treatment, and sherds exhibiting this trait were not classified as Plaquemine Brushed. Because no diagnostic ceramics were recovered, dating of this site must be based solely on the radiocarbon date reported above. This date places the site within that portion of the Mississippi Period when southeastern Louisiana was occupied by people who were part of the Plaquemine culture.

Lithics. One of the most interesting aspects of the excavation at 16SB140 was the presence of 36 lithic objects (Table 14), mostly flakes and debitage ("shatter"). All of the lithic material came from tan gravel pebbles or cobbles. After briefly examining the material, Paul Heinrich (personal communication 1993) indicated that the gravel probably was associated with the Citronelle Formation or High Terrace, and could have been collected in drainages such as the Amite River or Thompson Creek. Some of the material may have been subject to thermal alteration, but no deliberate heat treating was observed.

It is interesting to note that a wide range of lithic reduction activities are represented in the small sample from the site. No unmodified raw material was found (e.g., cobbles or pebbles), but most other aspects of reduction were present. The evidence suggests that primary reduction

Table 14. Artifacts from 16SB140, Excavation Unit

	Level 2		Level 3	
	Rim	Body	Rim	Body
Ceramics				
Baytown Plain, Var. Unspec. (<1/4")		2		1
Total Ceramics		2		1
Lithics				
Bipolar Wedge				
Primary Flakes: Platform Preparation				
Bipolar				1
Secondary Flakes: Bipolar				1
Broken				1
Interior Flakes: Biface Thinning				1
Bipolar				1
Shatter				1
Total Lithics				2
		2		9

Table 14 (continued). Artifacts from 16SB140, Excavation Unit

	Level 4	Level 4 (Dense Rangia)	Total
Lithics			
Primary Flakes:			
Platform Preparation			4
Bipolar			3
Secondary Flakes:			1
Platform Preparation			3
Biface Thinning			4
Bipolar			1
Interior Flakes:			1
Biface Thinning			1
Shatter			1
Modified Pebble			23
Total Lithics			

Table 14 (continued). Artifacts from 16SB140, Excavation Unit

	Level 5			Level 6		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified	4	44	48	1	6	7
Baytown Plain, var. Unspec. (<1/4")		22	22		6	6
Total Ceramics	4	66	70	1	12	13
Rims			Total			Total
Bowls: Flaring Rim, Simple, Round Lip (IIA)			1*			1*
Thickened Rim, Round Lip (IIA)			1			
Irregular "Peaked" Rim, Simple, Tapered Lip			1			
Jar: Flaring Rim, Simple, Flat Lip			1			
Total Rims			4			1

*Two sherds from Level 5 joined and were counted as one; three sherds from Level 6 join and were counted as one. These sherds from Levels 5 and 6 were found to join to form approximately 1/3rd of the rim of an open bowl.

Table 14. Artifacts from 16SB140, Excavation Unit

	Level 7		West Wall, 50-70 cm		Total
	Rim	Body	Rim	Body	
Ceramics					
Baytown Plain, var. Unspecified		5		1	1
Total Ceramics		5		1	1
Lithics					
Utilized Secondary Flake, Bipolar					
Total Lithics					
					Total
					1
					1

Table 14. Artifacts from 16SB140, Excavation Unit

	Total		Total
Ceramics			
Baytown Plain, var. Unspecified	Rim	5	31
Baytown Plain, var. Unspec. (<1/4")			87
Total Ceramics		5	118
Rims			
Bowls:			
Flaring Rim, Simple, Round Lip (IIA)			2
Thickened Rim, Round Lip (IIA)			1
Irregular "Peaked" Rim, Simple, Tapered Lip			1
Jar:			
Flaring Rim, Simple, Flat Lip			1
Total Rims			5
Lithics			
Bipolar Wedge			1
Utilized Secondary Flake, Bipolar			1
Primary Flakes: Platform Preparation			5
Bipolar			1
Secondary Flakes: Platform Preparation			3
Biface Thinning			2
Bipolar			4
Broken			1
Interior Flakes: Biface Thinning			5
Bipolar			1
Shatter			11
Modified Pebble			1
Total Lithics			36

Table 15. Artifacts from 16SB140, Surface Collections and Auger Tests

Ceramics	A.T.2 (Prime)		A.T.3	
	Rim	Body	Rim	Body
Baytown Plain, var. <u>Unspecified</u>		1		1
		Total		Total
		1		1

Table 15 (continued). Artifacts from 16SB140, Surface Collections and Auger Tests

Ceramics	Surface (*)		Total	
	Rim	Body	Rim	Body
Baytown Plain, var. Unspecified		2	2	4

(*) Combined Surface Collections from 7/7/92 and 7/13/92.

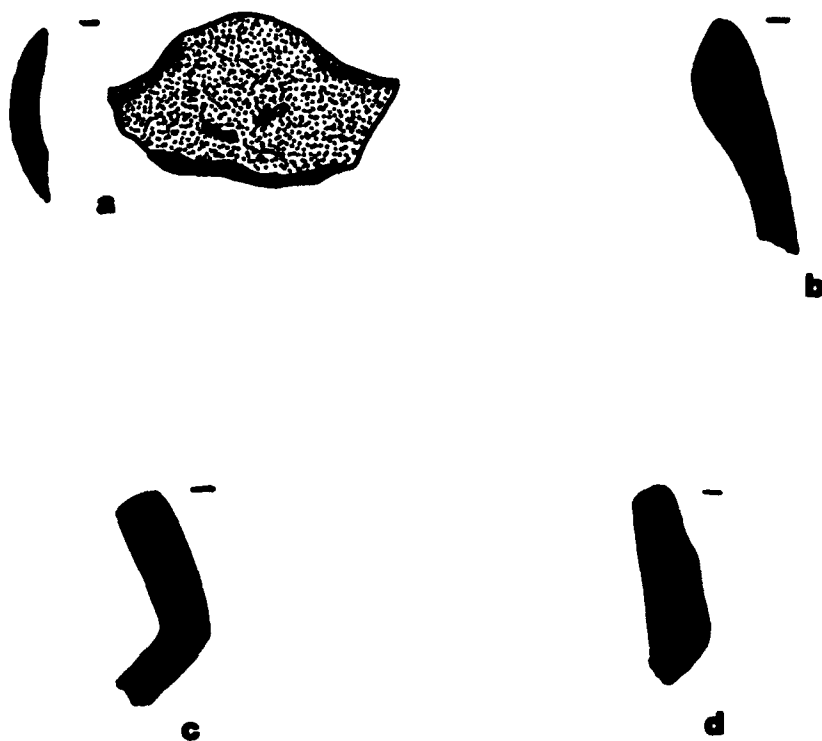


Figure 46. Selected rims from excavation unit at 16SB140 (Scale 1:1). Proveniences: a-c) Level 5 and d) Level 6. A) irregular "peaked rim," simple tapered lip; b) thickened rim, round lip (IIA); c) flaring rim, simple, flat lip; d) flaring rim, simple, round lip (IIA).

occurred at the site. This is noted in the presence of a small number of primary platform preparation flakes. Evidently the first stage of manufacture was to detach a small flake at one end of a pebble. This provided a reasonably flat platform for subsequent reduction. The primary means for further reduction was the use of bipolar techniques to produce a variety of flakes. The presence of secondary platform preparation flakes suggests, however, that free-hand percussion was also utilized. The bipolar technique resulted in a high frequency of debitage or shatter. A small number of biface thinning flakes indicates that tool manufacture or rejuvenation also occurred on site, although no "formal" tools were recovered.

The only "tool" form identified consists of a lens-shaped wedge. This object has been bifacially reduced, and may have originally been part of a bifacial tool. One edge was battered and the distal working edge showed evidence of micro-flaking. This is assumed to be a wedge or *pieces esquillees*. A utilized secondary bipolar flake was also identified. Since the bipolar technique largely results in small flakes and shatter, it might be presumed that this utilized flake was the end "target" of reduction -- that is, an expedient tool for a variety of activities.

Although 16SB140 did not yield ceramic artifacts that were chronologically diagnostic, it is still important for demonstrating the presence of lithic reduction and utilization in a Delta context. The clear evidence for *in situ* lithic manufacture marks the first time archaeologists have been able to glimpse an important aspect of aboriginal behavior. Lithic raw material, procured at some locale which must be assumed to lie at some great distance, was transported back to the Delta for subsequent utilization. It may be suggested, then, that acquisition and ultimately manufacture of lithic tools or expedient objects was part of the total "round" of prehistoric life, even in the lithically impoverished Delta region. It will be very interesting to observe whether the behavior suggested at this site is replicated elsewhere, or even if there is further evidence at this one site. The presence of such lithic diversity in this region is so unique as to call attention to the significance of the site even without the usual accompaniment of diagnostic ceramics.

CHAPTER 11
DISCUSSION OF THE SIGNIFICANCE OF THE SHELL BEACH BAYOU
COMPLEX OF SITES (16SB39, 16SB40, AND 16SB140)

Introduction

In Chapter 8 of this report, sites 16SB39, 16SB40, and 16SB140 were referred to as the "Shell Beach Bayou Complex" of sites. Chapters 8, 9, and 10 discussed each of the sites in detail. This chapter presents an overview of the complex as an archeological district and a discussion of its further research potential. The overview provides a summary of data presented in Chapters 8, 9, and 10.

Overview of the Complex

The Shell Beach Bayou Complex consists of three prehistoric sites (16SB39, 16SB40, and 16SB140). Figure 21 shows that the sites are located adjacent to Shell Beach Bayou and an intersecting bayou leading to Lake Borgne. The close proximity of these sites to one another, in combination with their shared research potential, indicates that the three sites are best considered as components of an archeological district.

Environmental Setting. The sites are situated on the natural levee associated with Shell Beach Bayou and that of the unnamed, intersecting bayou mentioned in the preceding paragraph. They are near or adjacent to the shore of Lake Borgne. The natural levees on which the sites rest are largely subsided. The vicinity of the sites and the bayous is marshland. The Mississippi River Gulf Outlet (MRGO), which is a ship channel constructed in the 1960s, is located a short distance to the south of the complex.

Trees are present only on portions of 16SB39. However, as recently as the 1960s, trees were present along much of the course of Shell Beach Bayou and the unnamed bayou, including those portions associated with 16SB40 and 16SB140. In addition to the disappearance of trees at 16SB40, this site has been exposed to erosion by Lake Borgne. Erosion has destroyed much of the site's original extent, and some other portions which appear to have integrity are submerged beneath the lake except during extreme low tides.

At the time of the aboriginal occupations of the sites, the natural levees would have been somewhat elevated above the surrounding marsh, and they would

have supported a hardwood bottom forest community. From this relatively elevated position, fauna and flora associated with a wetlands environment were accessible to the prehistoric occupants of the sites.

One of the aquatic resources exploited at the Shell Beach Bayou Complex was the brackish water clam (*Rangia cuneata*). Discarded shells at three of the middens (Middens C, D, and E) of 16SB39 now rise approximately 1-1/2 to 2 meters above the surrounding marsh. These three middens are immediately adjacent to the south side of Shell Beach Bayou. Their total linear extent is 255 meters. The other three middens of 16SB39 (Middens A, B, and F) are smaller and rise only about 1/2-meter above the marsh. These elevated *Rangia* middens are tree-covered, and they are the only areas in the vicinity of the Shell Beach Bayou Complex where trees remain present.

Periods of Occupation and Identities of Archeological Cultures. Radiocarbon dates and ceramic analysis provide information concerning the period of occupation of the Shell Beach Bayou Complex. Ceramics from 16SB39 indicate that the site was occupied in the Early Baytown and Early Coles Creek Periods. The C-14 date of *Rangia* shells associated with a burial at that site was 1380 ± 80 B.P. The calibrated range at two standard deviations is A.D. 542-772, which is consistent with the Early Coles Creek ceramics in the burial unit. Shell from a different unit at 16SB39 yielded a C-14 date of 1760 ± 60 B.P. with a calibrated range of A.D. 128-412. Those dates include both the Marksville and Early Baytown Periods. Ceramic artifacts, when compared with assemblages from sites in the Tensas Basin where the ceramic sequence is better-known, indicate that the actual occupation probably occurred during the Early Baytown Period. It is nevertheless possible that a Marksville component may be present at depths greater than those reached in the excavated units.

At present, the occupation at 16SB40 is dated solely by ceramic artifacts. However, relatively large numbers of diagnostic materials were recovered. The assemblage of rims and decorated sherds is consistent with activity during the Bayou Cutler phase of the Coles Creek Period. The Bayou Cutler phase was originally defined on the basis of collections made in St. Bernard, Jefferson, and Plaquemine Parishes.

The excavations at 16SB140 failed to yield diagnostic ceramics. However, shell from the site

provided a C-14 date of 640 ± 80 B.P. The calibrated date range is A.D. 1255-1429, which falls within the Mississippi Period. In southeastern Louisiana, sites dated to that period represent the Plaquemine culture.

Physical Characteristics. The three sites which comprise the Shell Beach Bayou Complex are best characterized as *Rangia* shell middens. The largest is 16SB39 where six discrete midden areas (Middens A-F) are easily recognizable. These middens are irregular terrain features which are completely covered by brush and trees. Middens C, D, and E are aligned roughly parallel to Shell Beach Bayou, and together extend about 255 m from east to west along the south bank of the bayou. A low gap separates Midden C from D and a second gap separates D from E. These gaps are each about 10 m wide. Middens C, D, and E slope steeply into the infilled channel of Shell Beach Bayou on their north side, and slope more gradually into the marshland on their south side.

Midden C is the easternmost of the middens in the linear group, and extends about 40 m east to west. This midden is about 15 m wide. Its maximum elevation above the bayou surface is approximately 1.75 m. Midden D is the central midden in the linear group. Midden D, including several low subsidiary ridges at its southeastern end, extends 35 m east-west and 17 m north-south. The highest point of Midden D is elevated about 1.6 m above the bayou surface. Midden E is the westernmost of the middens at the site and extends 168 m east to west. The highest point of E is approximately 2.17 m above the bayou surface. The width of Midden E is variable, ranging from less than 20 m to a maximum of approximately 35 m. An excavation unit and auger test placed in the gap between Middens D and E indicated that cultural deposits are present to a depth of approximately 2.35 m below surface.

Middens A, B, and F are smaller middens with lesser elevations. They are located north of Shell Beach Bayou. A and B are east of and F is west of the unnamed bayou channel between Shell Beach Bayou and Lake Borgne. Midden A is a low, roughly circular shell midden about 8 m in diameter. The highest point of Midden A is about .4 m above the adjacent marsh surface. An auger test indicated that cultural deposits were present to a minimum depth of 1 m.

Midden B extends about 18 m east-west and about 13 m north-south. It is composed of an irregular grouping

of ridges. An auger test indicated that the *Rangia* midden extended to a depth of 1.3 m below surface. Midden F is about 8 m long and 4 m wide. The highest point of the midden is about .3 m above the adjacent marsh surface. Only a few *Rangia* are visible on the surface, at the southern end of the midden. An auger test yielded *Rangia* from 14 to 60 cm below surface but the test was terminated before a sterile stratum was encountered.

Site 16SB40 was first recognized as an exposure of prehistoric material in an extensive lakeshore shell bank. This shell bank is composed largely of redeposited material. Small areas of *in situ* prehistoric midden were recorded in auger tests on the subsided natural levees flanking the unnamed abandoned channel. The midden area east of the channel was designated Locus A and the midden area west of the channel was designated Locus B. Only these areas of intact, buried midden are included in the archeological district designated as the Shell Beach Bayou Complex.

Site 16SB140 is a discrete shell midden on the south bank of Shell Beach Bayou, west of the continuous subsurface *Rangia* constituting Middens C, D, and E at 16SB39. The *Rangia* is visible just below the water's surface during extremely low tide stages, when it is exposed in the eroding bayou bank. Its main extent measures approximately 50 m along the bayou, although one smaller area of shell exposure was observed to the east.

Five 1 x 1 m units were excavated within the Shell Beach Bayou Complex. Three of these were at 16SB39. In the first, an *in situ* human burial was encountered. It was left undisturbed. Two shell beads were reburied when the unit was backfilled. The unit also yielded French Fork Incised and Coles Creek Incised sherds, which in southeastern Louisiana, are usually associated with the Coles Creek Period. As noted above, a sample of *Rangia* shell associated with the burial yielded an uncorrected C-14 date of 1380 ± 80 B.P.

One of the units at 16SB39 was placed on the northern slope of Midden E. Dense *Rangia* shell was encountered to a depth of one meter. Only undecorated ceramics and relatively small amounts of faunal material were recovered. Similar prehistoric "shell piles" have been reported at other southeastern Louisiana sites. They appear to represent clam-harvesting stations. The extent and height of Middens C, D, and E indicate that

during at least one part of the occupation of the Shell Beach Bayou Complex, such harvesting was an important activity.

The third unit at 16SB39 was placed in the gap between Middens D and E. Ceramic types represented in the unit included Marksville Stamped, Marksville Incised, and Larto Red. The assemblage was similar to those associated with the Early Baytown Period elsewhere in the Lower Mississippi Valley. As noted above, *Rangia* shell from the unit provided an uncorrected C-14 date of 1760 ± 60 B.P. Other artifacts included a shaped quartzite pebble which was imported to the site. It may have been used to smooth the surfaces of pottery. This suggestion is strengthened by the fact that it was recovered from a feature which also yielded several pottery coils. Faunal remains derived from fish, small mammals, large mammals, and unidentified taxa. Features consisted of concentrations of ash.

A 1 x 1 m excavation unit at 16SB40 exhibited a relatively high density of sherds and faunal remains. The latter were similar to those from 16SB39. Ceramic types represented included Chevalier Stamped, Coles Creek Incised, French Fork Incised, Mazique Incised, and Pontchartrain Check Stamped. Diagnostic rim modes, such as the "Onion Lake" mode, were also represented. The ceramic assemblage was consistent with an Early Coles Creek (Bayou Cutler Phase) occupation. A ferruginated sandstone artifact which had been worked was also recovered. Its wear patterns and shape indicated that it had been obtained at an outcrop rather than a stream. Like the lithic at 16SB39, the artifact was transported a considerable distance to the site.

Cultural material at 16SB40 derived from a stratum only approximately 35 cm thick, located between 60 and 95 cm below surface. Although *Rangia* shells were present, these were not as dense as was the case in the three units at 16SB39. This observation, in combination with the relatively higher density of ceramic and faunal artifacts, suggests that the function of 16SB40 may have been different than that of 16SB39.

A 1 x 1 m excavation unit at 16SB140 failed to yield diagnostic pottery types. Faunal remains were similar to those from 16SB39 and 16SB40. The site was more similar to 16SB40 in that the excavation unit revealed that artifacts are concentrated in a stratum only about 20 cm thick at a depth of 30-50 cm below surface. Although *Rangia* are dense in this midden

stratum, they are not as dense as was the case at 16SB39. Lithics from this unit consisted of chert gravel debitage and a lens-shaped wedge (*pieces esquillees*). The presence of debitage is the first evidence reported to date for on-site lithic reduction in this region of Louisiana.

Significance of the Complex

The Shell Beach Bayou Complex represents a locale with an occupation span from approximately A.D. 500 to A.D. 1400. Although portions of two of the sites (16SB40 and 16SB140) have been lost to erosion, the complex exhibits a high degree of integrity. The preceding discussion summarizes both above-ground and subsurface manifestations. Limited test excavations have indicated that prehistoric burials and other kinds of features are present. Also, ceramic artifacts at the complex afford an opportunity to refine the prehistoric cultural sequence for the Baytown, Coles Creek, and Mississippi Periods.

Exotic lithic materials have been recovered at the complex, and the presence of these artifacts affords an opportunity to further our understanding of aboriginal "rounds" which apparently included both upland and coastal wetland sites. Faunal remains are well-preserved. Study of these remains can provide important insights into the relative importance of hunting, trapping, and fishing. Based on the observation that charcoal is present in the middens at the site, and based on analogies with other sites, it is also likely that floral remains are preserved and that these could provide data on the exploitation of plant species. The presence of all of these materials within discrete, isolable components of a single complex of sites affords archeologists with an opportunity to explore the nature of "Prehistoric Adaptation to the Changing Deltas," which is recognized by Louisiana's Comprehensive Archeological Plan as an important research goal (Smith et al. 1983:97-98).

The "Delta Region" of Louisiana has long been recognized by archeologists as a portion of the Lower Mississippi Valley which warrants attention. As late as 1970, however, most archeological research in the area focused on the dating of recent geological phenomena rather than establishing typologies and local cultural sequences (Phillips 1970:867). The Shell Beach Bayou Complex is located within the eastern deltaic plain which extends from Bayou Lafourche to the Chandeleur

Islands, thus encompassing much of southeastern Louisiana. Even today, most archeological data for the eastern deltaic plain derives from survey level studies with only very limited excavations (e.g. Wiseman et al. 1979, Gagliano et al. 1979, Hunter et al. 1988, Franks et al. 1993). Unfortunately, archeological sites in the eastern delta plain are being destroyed at a rapid rate by the combined effects of construction, subsidence, and erosion (Goodwin et al. 1985). It is within this context that a complex of sites which is almost pristine and which includes discrete components associated with three different prehistoric periods achieves its significance.

The Shell Beach Bayou Complex of sites is located on a portion of the St. Bernard Delta Complex where initial land formation occurred between ca. 1500 B.C. and 500 B.C. Maximum development of this delta complex had occurred by A.D. 400. It appears that occupation at the Shell Beach Bayou Complex of sites began shortly thereafter. The earliest documented occupation occurred during the Baytown Period, as is indicated by ceramic analysis and to a lesser extent, a radiocarbon date from shell. This component alone would be highly significant, even were additional components not present. Phillips (1970:911) described the Whitehall Phase, which encompasses all Baytown Period sites in southeastern Louisiana, as a "collection of widely dispersed sites" rather than a coherent archeological manifestation. Gagliano et al. (1979:4-20) noted that the "Baytown period probably needs more work than any other period in coastal Louisiana." The deficit in our knowledge of this period can be corrected only by "...a typology based on local materials and local stratigraphy" (Phillips 1970:912). Site 16SB39 within the Shell Beach Bayou Complex is important because excavations there can provide data to further our understanding of this prehistoric period which is so poorly documented in the eastern deltaic plain.

The further potential which this component of the Shell Beach Bayou Complex exhibits is demonstrated by the fact that the collection of ceramic artifacts from a 1 x 1 m unit at 16SB39 is similar to Baytown Period assemblages from the Tensas Basin in Louisiana, where the period is better understood (Kidder, this report). Such similarities have not been documented previously. The unit which yielded these materials also included features consisting of concentrations of ash. One of these features yielded an exotic quartzite stone which was collected from an upland stream and transported to

the site. It may have been used to smooth the surfaces of ceramic vessels. The same feature yielded pottery coils. Remains of fish and mammals were recovered from this unit. Thus, in addition to containing data to advance the development of a local ceramic sequence, the Baytown component of the Shell Beach Bayou Complex could yield information about many aspects of lifeways during this period.

Occupation of sites at the Shell Beach Bayou Complex continued in the Coles Creek Period. Evidence for activity in this period consisted of ceramic artifacts from 16SB39 and 16SB40. Probable Coles Creek ceramics were recovered from the former site in association with a burial. Also associated with the burial were two shell beads. A larger sample of Coles Creek ceramics was obtained from an excavation unit at 16SB40. Excavation indicates that a buried, undisturbed Coles Creek midden extends from approximately 70 to 95 cm below the surface of a portion of that site. This in situ midden is the portion of 16SB40 included in the Shell Beach Bayou Complex. Although the Coles Creek Period is better known in the region than the Baytown Period, important research issues remain unresolved. One of these is whether early (Bayou Cutler Phase) and late (Bayou Ramos Phase) Coles Creek occupations in the eastern deltaic plain can be distinguished on the basis of ceramic assemblages. Preliminary data suggest that the distinction is possible (Gagliano et al. 1979), but work to date is based almost exclusively on surface collections. Excavations at 16SB40 strongly suggest a short-term occupation, which is the ideal situation for refining our knowledge of the temporal associations of ceramic types. As was the case at 16SB39, ceramics at 16SB40 are associated with faunal remains and lithic artifacts. The latter consisted of a specimen of worked, ferruginated sandstone that was collected from an outcrop at some distance from the site. In summary, the Coles Creek component of the Shell Beach Bayou complex affords an opportunity for the study of ceramic chronology, mortuary behavior, exploitation of wetlands fauna and probably of flora, and the use of exotic lithic materials.

Surface collections but not the excavation at 16SB40 yielded ceramics indicative of a Mississippi Period occupation. However, shell from an excavation unit at nearby 16SB140 provided a radiocarbon date of 640 ± 80 B.P. The calibrated date range is A.D. 1255-1429, which falls within the Mississippi Period. The density of ceramics indicates that large-scale

excavations would be likely to yield diagnostic ceramics. As was the case at 16SB40, a relatively thin *Rangia* midden is evidence for a short-term occupation, which as was the case for 16SB40, would enhance the research value of even a small sample of decorated sherds. Well-preserved faunal remains were recovered from the midden here, which indicates that this site affords yet another context for the study of prehistoric diets at a wetland locale. The recovery of chert debitage at 16SB140 is the first documented evidence for on-site lithic reduction in the eastern delta province. In a regional context, then, this component of the Shell Beach Bayou Complex is unique.

In summary, three adjacent archeological sites are included within the Shell Beach Bayou Complex. Although portions of two of the sites have been lost to erosion, the complex otherwise exhibits a high degree of integrity. Isolable components offer an opportunity to study prehistoric lifeways during the Baytown, Coles Creek, and Plaquemine Periods. Each of the sites considered individually would be significant. Their research value is enhanced by their close proximity and their association with a single distributary channel. Considered together as a district, the sites afford an opportunity to compare and contrast human exploitation of Louisiana's wetlands at a single locale through approximately 1000 years of prehistory. No comparable complex of sites exhibiting this degree of integrity and research potential has been documented to date in the eastern delta province. Because of its archeological integrity and its research potential (Criterion D), it is recommended that the Shell Beach Bayou Complex be considered eligible for inclusion in the National Register of Historic Places as an archeological district.

CHAPTER 12
ADDITIONAL SITES AND LOCALES WITHIN OR NEAR THE STUDY AREA

Site 16SC71

Previous Investigations. The Lake Borgne-Bayou Dupre site (16SB71) is an extensive scatter of water-tumbled historic and prehistoric artifacts on the shore of Lake Borgne. The site was first reported by Coastal Environments, Inc., in 1976 and was revisited by the Delta Chapter of the Louisiana Archeological Society in 1983. The extent of the site as recorded during the present survey is shown in Figure 47.

The site is located on the beach immediately landward of "Martello Castle" (Tower Dupre, 16SB85) which was built as a fortification in 1829 and 1830. At that time, the tower was connected to the mainland, but subsidence and erosion have made it an island structure. It seems possible, then, that artifacts at 16SB71 might be associated with the construction and occupation of Tower Dupre. Wiseman et al. (1979:5/15-5/16) suggested that some of the material might represent "...the wave-washed remains of the barracks and/or officer's houses associated with the fort."

The "Consolidated Site Record" dated 1979 describes the site as "A wave-washed *Rangia* and oyster midden about 30 m along the lake shore. Historic bricks and artifacts are numerous along with prehistoric sherds" (Wiseman et al. 1979). That form indicates that no features were observed but that "some redeposited building materials" were observed. The form states that:

Table and storage ceramics, wine bottles, and construction materials are abundant at the site. The historic material ranges from the late 1830's to the early 1900's, with most material dating to the mid-1800's. Prehistoric ceramics belong to the Bayou Cutler and Bayou Petre phases. The brick structure at the site probably housed personnel from Martello Castle (Wiseman et al. 1979).

The density of cultural materials was "abundant," the present condition was "wave-washed," and preservation was described as "good" (Wiseman et al. 1979).

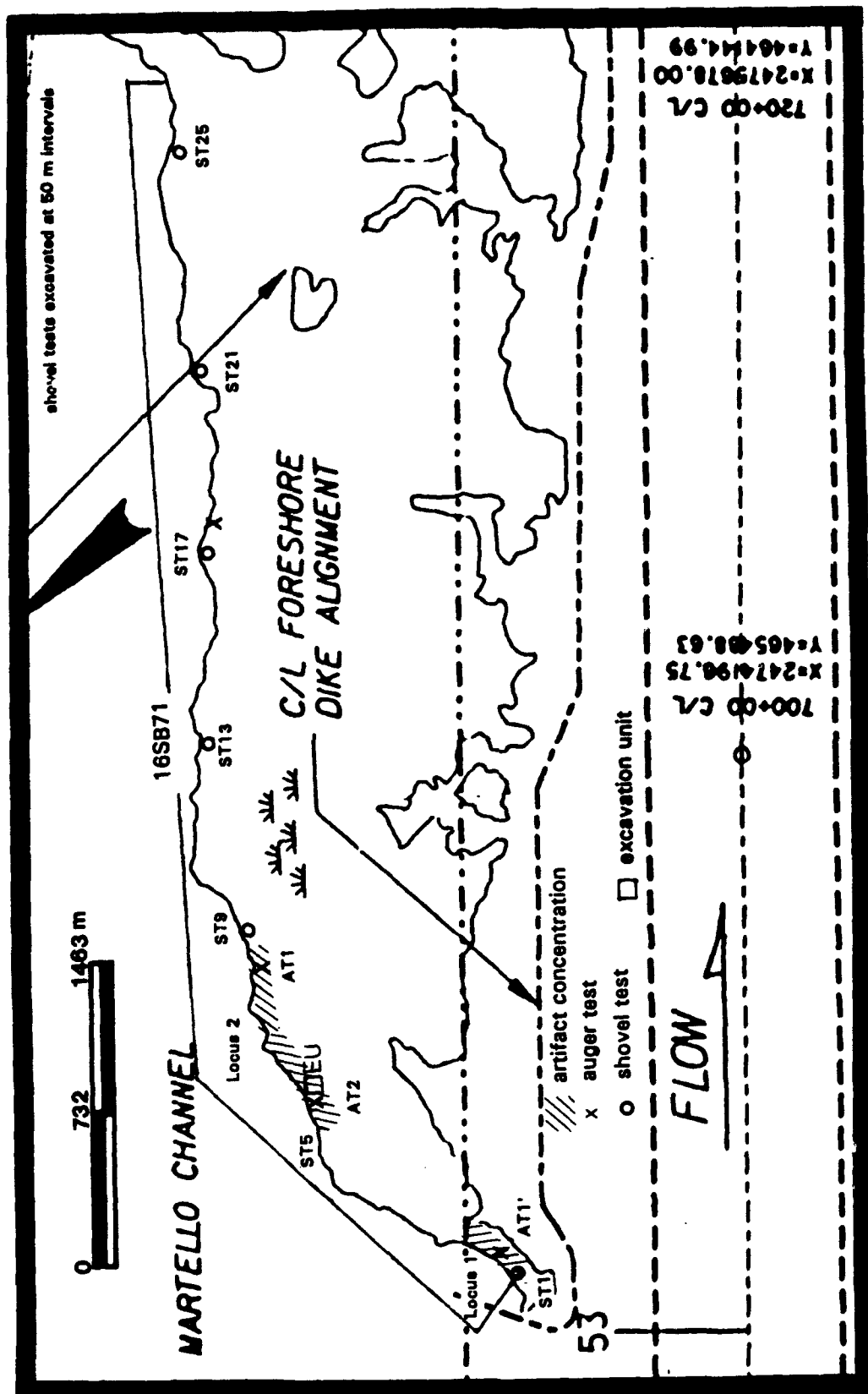


Figure 47. Detailed site map of 16SB71.

Material collected from the site and reported by Wiseman et al. (1979:5/16-5/19) was grouped into four functional categories: construction materials, household utensils, spirits, and medicines. Construction materials included earthenware tile, bricks (including one marked "St. JOE"), a glass doorknob, and hardware. Household utensils included a sherd derived from an annular yellowware chamber pot and five sherds of lead-glazed stoneware. Tablewares consisted of "plain" whiteware including one sherd with a maker's mark suggesting a late-nineteenth century date, blue shell-edged whiteware, purple transfer-printed whiteware, blue transfer-printed whiteware, pearlware including a sherd from a blue hand-painted bowl, and flow blue. "Spirit" bottle sherds were the most numerous artifacts, and appeared to date from the mid-1800s to the early 1900s. "Medicine" bottles were dated from the late-nineteenth through the twentieth century (Wiseman et al. 1979:5/16-5/19).

Beach Survey, Shovel Tests, and Auger Tests in 1992. Pedestrian survey was conducted along the lakeshore east of Martello Channel with screened shovel tests placed at 50 m intervals. Figure 47 shows the locations of the shovel tests as well as the locus designations as discussed in this chapter. The NODCOE project map was used as the basis for the site map.

Auger tests, which were excavated within artifact concentrations, are shown in Figure 47. Surface collections were also made, and proveniences for these were recorded in terms of the shovel tests by which each collection is bracketed. Shovel Test 1 (ST1) was placed at the western tip of the mainland by Martello Channel, at the mouth of Bayou Dupre. ST26 was by the western end of a 100 m wide, culturally sterile, marshy shoreline segment. Farther southeast, beginning near ST28, the lakeshore material is associated with 16SB40.

The current state site file description of 16SB71 as 100' x 20' x 1' "along bayou" and 500' x 20' x 1' "along lake" encompasses the two areas of densest concentrations of historic artifacts within the larger scatter. A concentration of historic (nineteenth-century) ceramics was noted during the present survey about 25 m east of ST1 and placed with the ST1-ST2 collection provenience. A general scatter of oyster shell and historic debris extended between the ST1 and ST2 positions. The collection from this area was extremely eroded, and as a result the artifacts could not be classified.

This refuse area, designated "Locus 1" (Figure 47), corresponds to the first area "along bayou" mentioned in the

"Site Record Form." The material may be derived from the nineteenth-century activity area along the east bank of Bayou Dupre, but no *in situ* midden or structural remains were encountered here. Also, as noted in the preceding paragraph, historic ceramics were too eroded to allow classification.

A small structure south of the battery is depicted on an 1831 map of the area but cannot be identified on later maps. No structures are depicted on this section of Bayou Dupre on a 1906 plan of the Lake Borgne Canal. Two buildings, probably hunting or fishing camps, are shown on the east bank of the bayou at its eastward bend (about 400-500 m southwest of Martello Castle) on the 1942 edition of the 15' St. Bernard USGS quadrangle. These structures appear on 1945 aerial photographs of the area. Only the southernmost building appears on 1951 aerial photographs, and it does not appear on the photographs dated 1964. At present, a wooden post or piling protrudes from the waters of Martello Channel about 40 m north of the tip of the "peninsula," now a small island. A tree stump and a metal rod protrude from the channel about 20-25 m northwest of ST2. These remains are in the approximate locations of the 1942 structures. Barely above water at high tide, they now constitute navigational hazards for small boats and could not be safely examined.

The greatest density of roofing slate, brick, and structural debris was noted between ST5 and ST7, with a diminishing amount of historic material and an increasing number of prehistoric sherds east of ST7. About 30 m east of ST8, the amount of historic material dropped off sharply and the proportion of *Rangia* to oyster shell rose in the shell beach ridge. A higher bank of oyster and *Rangia*, with small amounts of coal and cinder, is present between ST8 and ST9. The quantity of prehistoric pottery increases about 20 m east of ST7 and reaches its greatest concentration between ST8 and ST9. This second concentration of material, Locus 2 (Figure 47), corresponds to the second area "along lake" mentioned in the site file. This locale is closer to Martello Tower (now several hundred meters north of the lakeshore) and the architectural material may be derived from the military post, possibly from the outbuildings and outer works around the surviving masonry battery. No *in situ* midden or structural remains were found at this locale. The statement in the Consolidated Site Record (Louisiana Division of Archeology) that "The brick structure at the site probably housed personnel from Martello Castle" (Wiseman et al. 1979) apparently refers to structural debris rather than *in situ* remains.

A diminishing number of historic and prehistoric artifacts are scattered southeast along the lake shore from ST9 to ST26, in a low, discontinuous beach ridge. A large bank of shells was noted along this portion of the lakeshore in an 1810 map, prior to the construction of Martello Tower. This retreating shoreline area probably has been occupied or utilized for centuries.

Excavation Unit. The location of this 1 x 1 m unit is shown on the site map in Figure 47. The unit was placed by the densest concentration of brick fragments on the ground surface, near the western end of Locus 2. The unit was near the top of the beach slope above the high tide strand line. Oyster and *Rangia* shells were present on the ground surface in the vicinity of the unit. Surface artifacts included glass and brick.

The unit was excavated in arbitrary 10 cm levels. Depths were measured from the unit datum in the northeast corner. Datum was set 15 cm above ground surface at the northeast corner, but it was at ground surface relative to the south wall which was the highest part of the unit. Depths in this discussion, then, are relative to ground surface at the south wall, which was the highest part of the unit.

Level 1 (0-10 cm) yielded a mixture of historic artifacts and aboriginal sherds. Oyster shell and lesser amounts of *Rangia* shell were noted. The presence of coal, slag, bone, and prehistoric ceramics was noted in Level 2 (10-20 cm). Level 3 (20-30 cm) and Level 4 (30-40 cm) each yielded four sherds of a modern soda bottle. In Level 3, these glass sherds co-occurred with a prehistoric sherd, which is indicative of admixture of artifacts from different time periods. No prehistoric ceramics were recovered from Level 4. Level 5 (40-50 cm) was sterile, with the exception of a small amount of oyster and *Rangia* shell recovered from the uppermost 4 cm of the level within the NE-1/4 of the unit. Because Level 5 was essentially sterile and because auger tests indicated that no buried midden was present at the site, excavation was halted.

Figure 48 shows a profile of the south wall. Strata I and II are silty sands and represent wave-deposited soils. Most of the artifacts recovered derived from these strata, although some artifacts were also present in Stratum III which was a silty clay. Stratum IV was a black silty clay with large amounts of marsh grass roots. It was almost entirely sterile. At the depth of Stratum IV, water table had been reached, and numerous marsh grass roots were

present. All of the artifacts from the unit appear to have been deposited and buried by wave wash from Lake Borgne.

Prehistoric Artifacts (by T.R. Kidder). Only a small sample of aboriginal material was recovered from 16SB71 (Tables 16 and 17). The artifacts from the site are sufficient only to demonstrate the presence of a pre-Mississippi and a Mississippi period occupation. It is not possible to be more specific as to the culture historical sequence given the available data.

The single excavation unit at 16SB71 yielded prehistoric ceramics only from the top 30 cm of the pit (equivalent to Stratum I and II) (Table 16). The majority of the pottery came from Level 1, and all of this material had been eroded and/or wave-washed, indicating that it was not in a primary context. Only two sherds (one less than 1/4") were recovered below Level 1. Most of the pottery could be classified as Baytown Plain. Since the majority was eroded, it was not possible to determine, even subjectively, if this plainware might represent a Coles Creek, or possibly an earlier component. One sherd of Mississippi Plain, var. Pomme d'Or, was found in Level 1, but this too was eroded and not in an original context.

Collections from auger tests, shovel tests, and the surface were equally unrevealing. The only sherd of note is a rim found on the surface between shovel tests 9 and 10. This was a portion of a Baytown Plain jar with a short neck and everted rim. This vessel shape is characteristic of Mississippian contexts elsewhere in the Lower Mississippi Valley, but this sherd was not made on a Mississippi period paste (i.e., Addis Plain or Mississippi Plain). There is no explanation for this vessel shape, although so little is known of vessel shape and paste characteristics in southeastern Louisiana that it may, as larger collections are made, prove to be temporally diagnostic.

The results of analysis of ceramics from 16SB71 can only be described as frustrating. The lack of secure contexts or of diagnostic ceramics makes it difficult to utilize the ceramic data in any meaningful manner. It is only possible at present to note two components, one of which dates to the Mississippi period, and one which predates this occupation, but by an unknown period of time.

Historic Artifacts. (by Jill-Karen Yakubik). Table 15 is a list of historic artifacts collected from the various proveniences of 16SB71. The site yielded a relatively large collection of late-nineteenth- through twentieth-century bottles (Tables 18 and 19). All of these were recovered

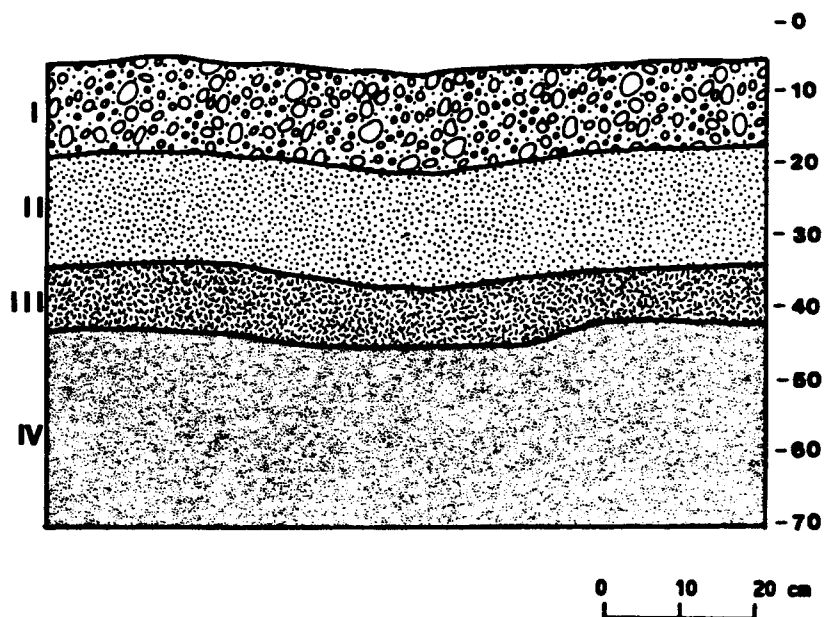


Figure 48. Profile of the south wall of the excavation unit at 16SB71.

Stratum I	10YR 5/2 (grayish brown) silty sand with <i>Rangia</i> and oyster shell
Stratum II	10YR 2/1 (black) silty sand
Stratum III	10YR 3/1 (very dark gray) silty clay
Stratum IV	10YR 2/1 (black) silty clay

Table 16. Aboriginal Ceramics from 16SB71, Excavation Unit 1

Ceramics	Level 1*		Level 2	
	Rim	Body	Rim	Body
Baytown Plain, var. Unspecified	1	21		
Baytown Plain, var. Unspec. (<1/4")		7		1
Mississippi Plain, var. Pomme d'Or		1		
Total Ceramics	1	28		1
Rims				
Bowls: Interior Beveled Lip				
Total Rims			1	1

*All pottery from Level 1 is eroded/wave-washed.

Table 16 (continued). Aboriginal Ceramics from 16SB71, Excavation Unit 1

Ceramics		Level 3		Total	
	Rim	Body	Total	Rim	Body
Baytown Plain, var. Unspecified		1	1	1	22
Baytown Plain, var. Unspec. (<1/4")					6
Mississippi Plain, var. Pomme d'Or					1
Total Ceramics		1	1	1	30
Rims					
Bowls: Interior Beveled Lip			Total		Total
Total Rims					1
					1

Table 17. Aboriginal Ceramics from 16SB71, Shovel/Auger Tests and Surface Collections

Ceramics	A.T.1			S.T.1		
	Rim	Body	Total	Rim	Body	Total
Baytown Plain, var. Unspecified		3	3			
Baytown Plain, var. Unspec. (<1/4")		2	2		2	2
Total Ceramics		5	5		2	2

Table 17 (continued). Aboriginal Ceramics from 16SB71, Shovel/Auger Tests and Surface Collections

	S.T.10			S.T.13		
	Rim	Body	Total	Rim	Body	Total
Ceramics						
Baytown Plain, var. Unspecified		1	1		1	1
Total Ceramics		1	1		1	1

Surface Collections

Coramios

Table 17 (continued). Aboriginal Ceramics from 16SB71, Shovel/Auger Tests and Surface Collections

	Total		Total	Total
Ceramics				
Baytown Plain, var. Unspecified		Rim	2	7
Baytown Plain, var. Unspec. (<1/4")			4	4
Total Ceramics			9	11
Rims				
Bowls (?): Eroded Line Below Lip, Simple, Round Lip				1
Jars: Short Neck, Everted Rim, Mississippian Shape but not on Mississippi Period Paste				1
Total Rims				2

Table 18. Artifacts Recovered at 16SB71.

LOCUS 1

Shovel Test 1

.6 grams charcoal
.3 grams gravel

Shovel Test 2

1 brown glass

Shovel Test 3

196.3 grams brick

LOCUS 2

Excavation Unit Level 1 (0-10 cm below surface)

5 brown glass
13 clear glass
2 clear bottle bases
1 clear jar neck, threaded closure
1 clear soda bottle neck, crown cap, automatic
manufacture
1 green glass
2 light green soda bottle glass
1 eye dropper
52.9 grams brick

Excavation Unit Level 2 (10-20 cm)

.9 grams coal
4.2 grams slag

Excavation unit 1 Level 3 (20-30 cm)

4 clear glass (modern soda bottle)
1 olive glass
896.6 grams brick

Excavation Unit 1 Level 4 (30-40 cm)

4 clear glass (modern soda bottle)
15.8 grams brick

Table 18 (continued). Artifacts Recovered at 16SB71.

Shovel Test 5

73.4 grams brick

Surface Between Shovel Tests 7 and 8

- 1 ironstone
- 2 brownware
- 1 clear graduated flask base, Armstrong Cork Co. mark
- 1 clear soda bottle, automatic manufacture, brown cap, unidentified keystone mark
- 1 clear vial base, Owens-Illinois mark
- 1 light green Worcestershire Sauce bottle base
- 1 light green bottle base, unidentified mark
- 1 olive bottle base, turn mold
- 2 opaque black bottle bases, turn mold

Surface Between Shovel Tests 8 and 9

- 1 gray salt-glazed stoneware
- 1 amethyst glass
- 1 amethyst condiment bottle top, tooled finish
- 1 clear pharmaceutical bottle base, Owens Bottle Co. mark
- 1 light green soda bottle, Brockway Machine Bottle Co. mark
- 1 opaque "black" bottle, turn mold

Surface Between Shovel Tests 9 and 10

- 1 ironstone (cup fragment)
- 1 amethyst union oval flask, double bead finish, tooled

Table 18 (continued). Artifacts Recovered at 16SB71.

Surface Between Shovel Tests 10 and 11

- 1 flecked lead-glazed redware (bowl base)
- 1 light green Baltimore oval flask, tooled finish
- 1 light green soda bottle base

Surface Between Shovel Tests 11 and 12

- 1 gray salt-glazed stoneware
- 1 amethyst flask base
- 1 light green soda bottle base, post bottom, American Bottle Co. base
- 1 olive wine bottle neck, automatic manufacture

Surface Between Shovel Tests 12 and 13

- 1 clear picnic flask, automatic manufacture, cork closure, Owens Illinois mark
- 1 amethyst bottle base
- 1 amethyst bottle neck, tooled finish

Surface Between Shovel Tests 13 and 14

- 1 brown "Dr. Hostetter's" bitters bottle, McKee & Co. mark
- 1 light green panel flask base, post bottom
- 1 opaque "black" bottle base, turn mold

Surface Between Shovel Tests 14 and 15

- 1 clear panelled bottle base, post bottom, Owens Bottle Co. mark

Shovel Test 16

- 1 brown glass

Shovel Test 18

- 1 olive glass

Surface Between Shovel Tests 18 and 19

- 1 light green T-shaped stopper

Table 18 (continued). Artifacts Recovered at 16SB71.

Surface Between Shovel Tests 21 and 22

- 1 Provence jar (severely water worn)
- 1 clear extract bottle, automatic manufacture

Surface Between Shovel Tests 22 and 23

- 1 brass handle for wood object (24 cm length, 2.7 cm width)
- 1 blue milk-of-magnesia glass

Auger Test 2 (0-45 cm)

- 1 ironstone (plate)
- 1 clear glass bottle neck

Table 19. Minimum Numbers of Bottles, 16SB71.

Pharmaceutical	7
Bitters	1
Liquor	7
Wine	1
Soda/Water	6
Food/condiment	3
Jars	1

from the surface. Dating of the bottles was facilitated by the fact that many of them were marked. One automatically-manufactured, clear picnic flask was embossed with a post-1929 Owens Illinois Glass Co. mark (Toulouse 1971:403). Unfortunately, the mark lacked plant, year, and mold information. A vial base bore a post-1954 Owens Illinois mark (Toulouse 1971:403). One clear paneled bottle base had an Owens Bottle Co. mark, as did a clear pharmaceutical bottle base. This particular mark dates to the 1911 to 1929 period (Toulouse 1971:393).

Other marked glass included a green soda bottle base with a 1905-1916 mark from the American Bottle Co of Chicago. One graduated flask base bore the mark of the glass division of the Armstrong Cork Co. of Lancaster, Pennsylvania. This mark dates to the 1938-1969 period. Another bottle, although it lacked an identifiable mark, was embossed "KEAVENY BUCKLEY & CO./348 & 350/BIENVILLE STREET/NEW ORLEANS."

Only one bottle had a nineteenth-century mark. This was a "Dr. Hostetter's" bitters bottle that bore a McKee and Co. mark. The Pittsburgh company utilized this particular mark between 1860 and 1890. Although this was the only bottle with an identifiable nineteenth-century mark, other bottles exhibited attributes characteristic of the late-nineteenth century. This includes turn mold bottles and bottles with tooled finishes, although the latter continued to be produced well into the twentieth century.

A few of the bottles had unidentifiable marks. One of these was a keystone mark on an automatically manufactured soda bottle. Toulouse (1971:558) suggests that this mark may have been used by a Pennsylvania firm. Another light green bottle base had an elaborate "C C & Co." intertwined mark. One clear extract bottle's mark possibly was that of the Underwood Glass Co., of New Orleans (Toulouse 1971:506).

One marked ironstone fragment was also recovered. It bore a 1900-1948 Edwin Knowles China Company mark (Gates and Omerod 1982:Figure 82a). The majority of the few ceramics collected dated to the late-nineteenth or early-twentieth century. The two exceptions were a fragment of a Provence jar, and a large piece of a Flecked Lead-Glazed Redware bowl. Both of these sherds date from the eighteenth century, although continental European coarsewares remained in use into the nineteenth century in southeastern Louisiana (Yakubik 1990). Provence jars in particular are still occasionally seen in use today.

The materials recovered from excavations were largely non-diagnostic. However, fragments of a modern soda bottle were recovered from Levels 3 and 4 (35-45 cm below datum) in Excavation Unit 1.

In summary, the historic material from 16SB71 dates from the late-nineteenth into the twentieth century. Although material dating as late as the 1950s was collected, most of the ceramics and glass were probably manufactured during the period between 1880 and World War II. The number and variety of bottles represented at the site suggest that there may have been a hunting or fishing camp at or near 16SB71 during the period 1880-1940. It should be noted again in this context that Tower Dupre would once have been joined by solid land to the area now considered as 16SB71. However, with the exception of the two sherds of coarse earthenware, the artifacts from this site do not appear to derive from construction of or military activity associated with Tower Dupre.

NRHP Evaluation. Criterion D, the potential for a property to yield information important in prehistory or history, is the criterion most often applied to archeological sites. In order for 16SB71 to be considered eligible for inclusion in the National Register, it would be necessary for the site to have the potential to yield information about prehistory or history. In addition, it would be necessary for that information to be important and for the site to exhibit integrity (National Park Service 1982:28,30).

Shovel tests, auger tests, and a 1 x 1 m unit were excavated at 16SB71. All of these indicated that cultural material is present only on the surface or within redeposited beach ridges. Thus, the artifacts are not in a primary context, and the site does not exhibit the qualities of integrity and research potential necessary for an archeological site to be considered eligible for inclusion in the National Register. On the basis of field work reported in this chapter, then, it is recommended that 16SB71 should not be considered eligible or even potentially eligible for such inclusion. No further archeological evaluation is recommended. No mitigative or protective measures are recommended as necessary for 16SB71.

Site 16SB148

Site Description. A number of shell exposures along the shore of Lake Borgne were recorded during bankline survey east of 16SB40. All of these exposures were composed of redeposited material in the lakeshore beach ridge. The

small number of prehistoric sherds and historic artifacts found in this area are severely eroded. As these archeological occurrences lack integrity and represent comparable depositional conditions, they have been grouped as locales of a single site. Each locale is given a numerical designation (e.g. 16SB148-1, 16SB148-2). The overall extent of the site is shown in Figure 49. Prehistoric artifacts are summarized in Table 20.

The first and highest shell ridge (16SB148-8) east of 16SB40 lies only 150-200 m southeast of the subsided natural levee on the eastern side of the infilled channel. Because of its proximity to sites 16SB39 and 16SB40, it was considered possible that this locale represented part of either 16SB40 or 16SB39. However, shovel and auger tests demonstrated that this was not the case.

The eastern end of the pedestrian shovel test regimen brackets 16SB148-8. The low shell ridge begins about 20 m east of ST42 and extends east almost 100 m, ending about 12 m east of ST44. This shell exposure was noted during bankline survey on June 8 and subsequently was designated locale 16SB148-8. The severely eroded sherds and historic glass fragments here are distinct from the nearly pristine pottery collected at Locus A of 16SB40. Shovel Tests 43 and 45 yielded banded sandy and silty loams. Shovel Test 44 yielded clayey loam below 30 cm of shell hash (*Rangia* fragments with a few oyster fragments). East of this shell exposure, the gaps in the beach ridge make pedestrian survey difficult, and the lakeshore was surveyed by bankline reconnaissance with a small boat.

An auger test was placed 20 m southeast of Shovel Test 43, near the top of the sloping beach above the normal high tide mark. The shell beach ridge is a short distance landward of this auger test. A "shell hash" of broken *Rangia* in a 10YR 2/1 (black) sandy silt loam extended from the ground surface to a depth of 22 cm. From 22 to 105 cm were 10YR 4/1 (dark grey) plastic silty clay and looser silty soils with organic admixture. From 105 to 170+ cm was a stiffer 2.5YR 4/2 (dark grey) plastic clay which forms part of the deeply subsided levee soil on the north bank of Shell Beach Bayou. The nearest auger test in the 16SB39/40 group, AT21 at N25 E150 on the site grid, yielded stiff dark-grey and grey clays from a depth of 80 cm to over 200 cm. The retreating lakeshore has pushed the beach ridge into the infilled channel at Shell Beach Bayou at 16SB148-8 and for about 500 m east of that locale. No auger tests were placed in the old channel itself.

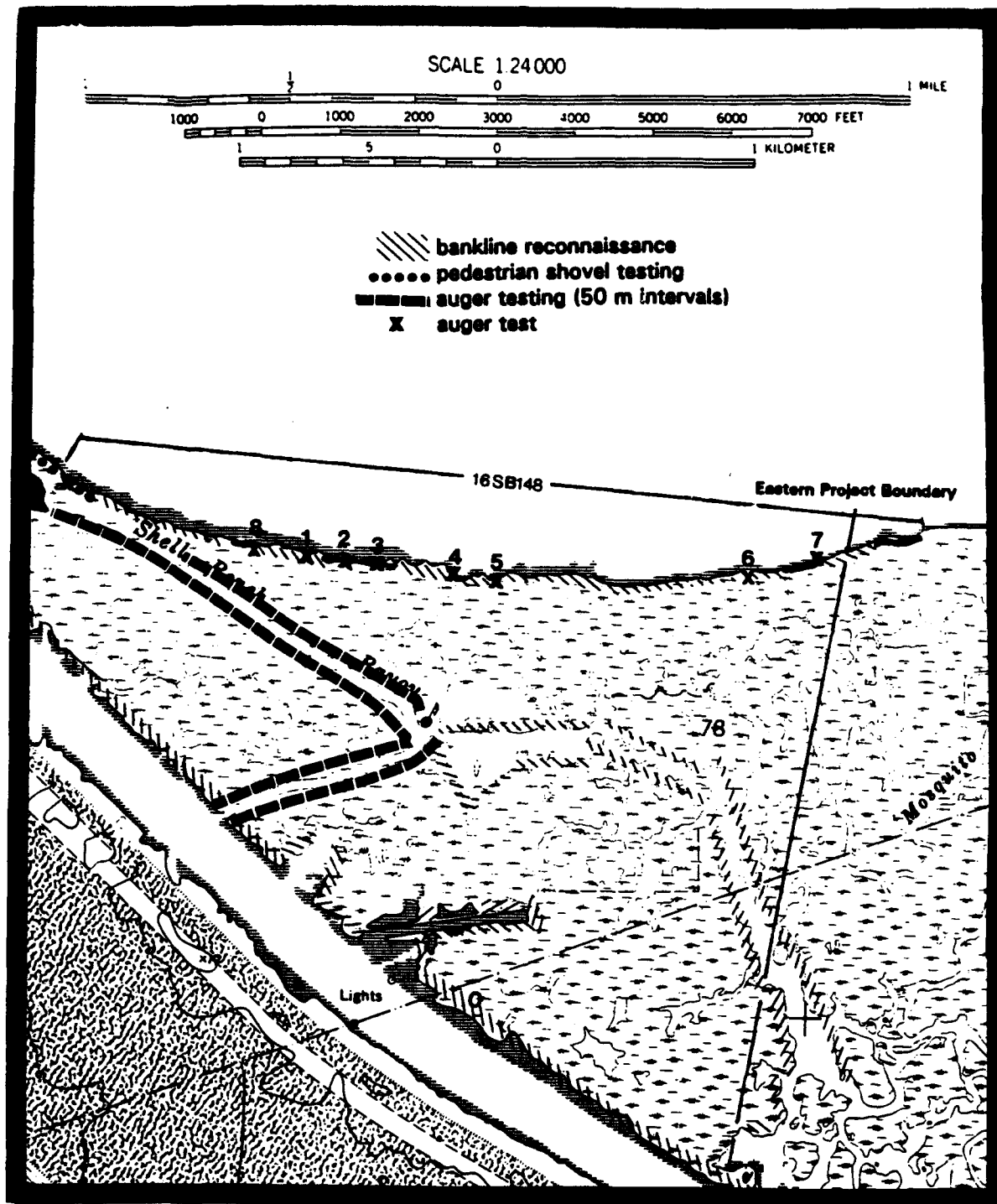


Figure 49. Site map of 16SB148.

Table 20. Ceramics from 16SB148 Surface Collections.

Ceramics	16SB148-1			16SB148-1		
	Locus 1, Sfc.			Locus 2, Sfc.		
Baytown Plain, var. Unspecified	Rim	Body	Total	Rim	Body	Total
Total Ceramics	0	2	2	0	2	2

Table 20 (continued). Ceramics from 16SB148 Surface Collections.

Ceramics	6SB148-2			16SB148-2		
	Locus 1, Sfc.			Locus 2, Sfc.		
	Rim	Body	Total	Rim	Body	Total
Baytown Plain, var. Unspecified	1	3	4		4	4
Baytown Plain, var. Unspec., (<1/4")		2	2		1	1
Total Ceramics	1	5	6	0	5	5

Table 20 (continued). Ceramics from 16SB148 Surface Collections.

Ceramics Baytown Plain, var. <u>Unspecified</u> Total Ceramics	16SB148-2			16SB148-3		
	Locus 3, Sfc.			Sfc.		
	Rim	Body	Total	Rim	Body	Total
	1	5	6		1	1
	1	5	6		1	1

Table 20 (continued). Ceramics from 16SB148 Surface Collections

Ceramics	16SB148-5			16SB148-6		
	Rim	Sfc. Body	Total	Rim	Sfc. Body	Total
Addis Plain, var. Unspecified		1	1			0
Baytown Plain, var. Unspecified			0		2	2
Evansville Punctated, var. Unspec.			0		1	1
Total Ceramics	0	1	1	0	3	3

Table 20 (continued). Ceramics from 16SB148 Surface Collections

	16SB148-7			16SB148-8		
	Rim	Sfc. Body	Total	Rim	St. 43-St. 44 Body	Total
Ceramics						
Baytown Plain, var. Unspecified	3	9	12			0
Total Ceramics	3	9	12	0	0	0
Lithics						
Chert Flake Core (Utilized?)						1
Unmodified Pebble						1
Total Lithics						2

Table 20 (continued). Ceramics from 16SB148 Surface Collections

	Total		
	Rim	Body	Total
Ceramics			
Addis Plain, var. Unspecified	0	1	1
Baytown Plain, var. Unspecified	3	19	22
Baytown Plain, var. Unspec., (<1/4")	0	3	3
Evansville Punctated, var. Unspec.	1	1	2
Total Ceramics	4	24	28
Lithics			
Chert Flake Core (Utilized?)			1
Unmodified Pebble			1
Total Lithics			2

The next shell exposure to the east is 16SB148-1. Two small exposures 75 m apart were designated Locus 1 (the western one) and Locus 2 (the eastern one) of this same locale. An auger test was placed in the center of each concentration. Below the surficial shell hash these auger tests yielded banded sandy and silty loams to a depth of 85 cm, below which was dark grey plastic clay. That clay corresponds to the top of the subsided levee soils noted at 16SB148-8. An auger test about 150 m east of 16SB148-1, Locus 2, in a shell exposure lacking cultural material, encountered the same dark-grey clay at 100 cm. This levee soil was not identifiable at shell exposures farther east along the lakeshore at progressively greater distances from the course of Shell Beach Bayou.

Farther east on the lakeshore was an extensive beach ridge about 320 m long (16SB148-2). This shell exposure was predominantly *Rangia*, with smaller proportions of oyster and *Tagelus* (stout razor clam) than were present at the non-cultural shell exposure 75 m to the west. Three loci (Nos. 1-3, from west to east) were distinguished here. These were shell exposures 150, 60, and 60 m long respectively, separated by 25 m long gaps. The gaps are probably due to localized erosion patterns. Small numbers of sherds were collected at each locus. Auger tests were placed at concentrations of surface material in Locus 1 and Locus 2. Both tests yielded banded sands and silts to a depth of 50-60 cm, below which loose soils were encountered in these auger tests, indicating that natural levee deposition associated with Shell Beach Bayou is at a depth greater than 2 m if present in this location.

About 200 m farther east is locale 16SB148-3. Auger tests revealed sandy loam beach deposits to a depth of 45-50 cm. Below this was a 10YR 4/1 (grey) plastic silty clay to a depth of 120+ cm.

About 200 m farther east is locale 16SB148-4. This locale and the lakeshore shell exposures farther east lie beyond the coverage of the detailed project maps (scale 1:12,000) showing the proposed construction areas on the MRGO channel and immediately adjacent areas. The plotted portions of these eastern shell exposures are therefore less precise than those farther west. Two very small (less than 1/4-inch) sherds were recovered in the auger test. No other cultural material was recovered. The auger tests encountered 10YR 4/1 (dark grey) plastic silty clay from 30 to 70 cm depth, below which the soil fell from the auger during extraction.

About 300 and 700 m farther east, short exposures of *Rangia* were noted, but no cultural material was observed during walk-overs. Oyster shells were more numerous than *Rangia* shells here and in other culturally sterile areas along the lakeshore. The redeposited beach ridge *Rangia* concentrations probably are derived in part from now-destroyed prehistoric sites as reflected by recovery of small amounts of severely eroded pottery. The smaller lakeshore shell exposures presenting a greater variety of shells (*Rangia*, oyster, *Tagelus*, mussel) may reflect the mixed biological niches present within Lake Borgne.

Farther east, about 1000 m from 16SB148-4, is locale 16SB148-5. A single potsherd was collected here near the center of a slightly higher bank on a small point. An auger test was placed in the center of this exposure. Banded sand and silt loams extended to 40 cm, below which was plastic clayey silt. A leaning concrete survey post in the lake, about 40 m west of this locale, bears a Louisiana Wildlife and Fisheries survey plaque. The legend on the plaque is partially legible. The monument probably represents No. 62 in a lakeshore series.

About 120 m east of 16SB148-5 is locale 16SB148-6. A shovel test placed nearer the center of the shell exposure revealed sandy loam to about 40 cm and clay loam below. An auger test placed near the eastern end of the locale revealed plastic clayey silt from a depth of 40 to 160+ cm. Farther east is a concrete survey post in the lake, which marks the approximate eastern boundary of the project area. This post bears Louisiana Wildlife and Fisheries survey plaque No. 61.

About 200 m east of 16SB148-6 is locale 16SB148-7. This shell exposure, east of Survey Monument No. 61, offered a larger amount of pottery than the other locales. The potsherds were concentrated at the highest part of the shell bank, near the western end of the locale. This locale was east of the project area and therefore no shovel or auger tests were excavated. Another concrete survey post in the lake, bearing Louisiana Wildlife and Fisheries survey plaque No. 60, is about halfway between 16SB148-7 and Mosquito Bayou. This series of survey monuments was set on the lakeshore but they now lie within the lake because of shoreline erosion.

A series of small shell exposures was observed on the lakeshore (approximately 1200 m) between 16SB148-7 and an extensive shell exposure by the west bank of Mosquito Bayou. The shell concentrations at the mouth of the bayou are part of the Mosquito Bayou site (16SB132) which lies beyond the

project boundary. Shoreline reconnaissance was conducted in this area solely to provide reference points for work within the survey area.

A recent overview of St Bernard's natural and cultural resources indicates an unconfirmed prehistoric site on or near Shell Beach Bayou about 500 m east of 16SB39 (Wicker et al. 1982:Figure 2/50). This corresponds to a location erroneously labeled as site 16SB32 in the Coastal Resources Atlas of St. Bernard Parish (Burk & Associates, Inc. n.d.:Map 10). Site 16SB32 is actually the Twilight Harbor site at the former mouth of Bayou La Loutre, in the eastern region of St. Bernard Parish. The locale within the project area shown in the above sources apparently is derived from an earlier site location map (the 15' St. Bernard quad) at the state site files, whereon a "sterile shell deposit" is shown on the lakeshore roughly at the same position. That shell deposit probably represents locale 16SB148-8, the most visible of the beach ridge shell exposures east of 16SB40. The difficulty in accurately plotting its position probably led to its placement slightly too far east on the quadrangle map, and the later studies inadvertently shifted it slightly southward, away from the lakeshore.

NRHP Evaluation. No *in situ* deposits were encountered in shovel tests or auger tests at this site. All of the artifacts were severely eroded which indicates they have been redeposited from the lake. Thus, the site lacks the quality of integrity that would be necessary for listing in the National Register (National Park Service 1982). Because of this lack of integrity, 16SB148 should not be considered eligible or potentially eligible for listing in the National Register of Historic Places. Therefore, no mitigative or protective measures are recommended as necessary.

Locales Not Reported as Archeological Sites

Introduction. Three locales (6/9/92 No. 1, 6/19/92 No. 2, and 7/16/92 No. 1) were recorded but were not assigned state site numbers because only relatively recent structural or artifactual remains were observed. Two additional locales (6/10/92 Nos. 1 and 2) were recorded but each of these yielded fewer than five prehistoric artifacts. Because of the low density of cultural material and because the artifacts did not appear to be in primary context, these two locales were not reported as archeological sites. They are more aptly described as "Isolated Finds." Because neither structural remains with integrity were recorded nor sufficient numbers of artifacts were recovered for these locales to be considered sites, they do not warrant further consideration for listing in the National Register of

Historic Places. The locations of these locales are shown in Figure 50.

Locale 6/9/92 No. 1. This locale is situated on the north bank of Shell Beach Bayou at the eastern bend of the bayou, on a broad point between the narrow arm of Shell Beach Bayou and the meandering channel leading east to Mosquito Bayou. The locale is a cluster of upright wood posts extending north from the bankline. The pilings are the remains of a destroyed camp structure. Scattered household hardware is concentrated at the water's edge. Two shovel tests were excavated among the pilings, yielding fragments of fused, undateable glass. An auger test on the point yielded sterile loose wet silt loam and silty clay to 140 cm depth.

These structural remains represent a structure depicted at this location on the 1942 edition of the 15' St Bernard USGS quadrangle. The building also appears on a 1945 aerial photograph. Because no historic or prehistoric artifacts were observed or recovered at this locale, it was not considered to represent an archeological site.

Locale 6/10/92 No. 1. This locale is on the north bank of the MRGO channel, between the western arm of Shell Beach Bayou and Martello Channel. A mixture of materials is exposed on the ground surface. These include steel ship cables, iron hardware, river gravel, garfish scales, and two (Tchefuncte) sherds (Table 21 and Chapter 13). Small amounts of oyster and *Rangia* were present on the narrow beach along the ship channel and on top of the small brush-covered elevation at the center of the locale. Oyster was more frequent on top of the small bankline rise. Four auger tests were excavated at this locale. One of these was placed at the highest point in the center of the locale. Bracketing auger tests were placed 5 m north (0 degrees), 15 m ESE (120 degrees), and 15 m WNW (300 degrees) of the central auger test. All of these encountered sandy loam to a depth of about 20-25 cm, below which were banded silty loams and clayey silts with high organic content. Clayey silt loam or peat was the dominant soil constituent.

No in situ cultural material or midden was recovered at this locale. The broad range of materials concentrated at this bankline location suggests that it was recently used as a dumping area by a vessel on the ship channel. It is impossible to identify the origin of the prehistoric sherds. They may have been brought up in the course of oyster harvesting at some other location. Because only two sherds were recovered and because they were not in primary context, the locale was not considered to be an archeological site.

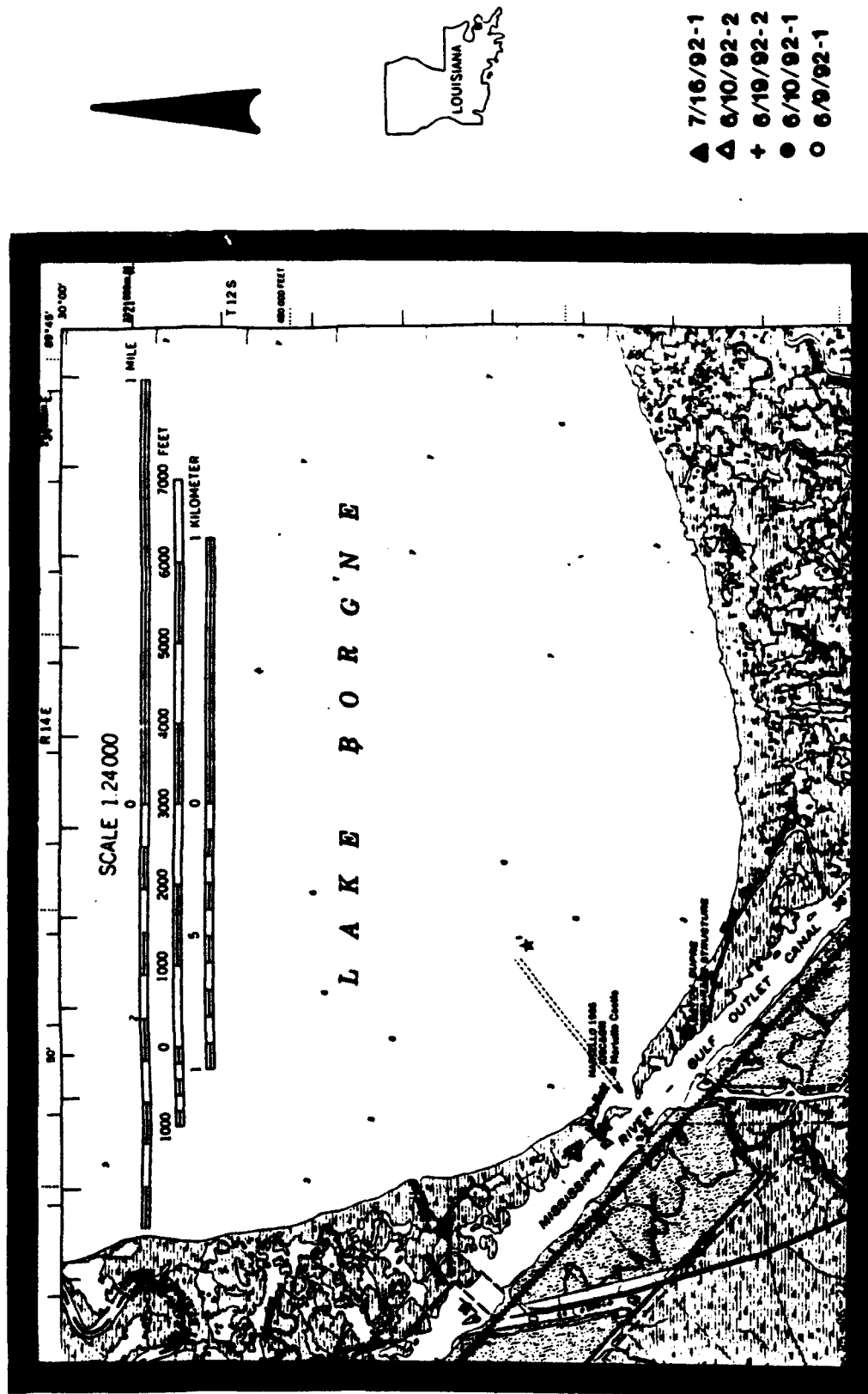


Figure 50. Excerpt from the St. Bernard, LA (1989) USGS quadrangle showing the location of five non-site locales.

Table 21. Ceramics from Locale 6/10/92 Surface Collections

Ceramics	6/10/92-1			6/10/92-2		
	Rim	Body	Total	Rim	Body	Total
Baytown Plain, var. Unspecified						
Tchefuncte Plain, var. Unsped.		2	2	1		1
Total Ceramics	0	2	2	1	0	1

Locus 2, Inlet A

Rim Body Total

1 0 1

Locale 6/10/92 No. 2. This locale, consisting of a *Rangia* exposure, is situated on the north bank of the MRGO channel about 700-820 m northwest of Martello Channel. It occupies the top of a moderately high, brush-covered bank of the MRGO channel. The locale contains discrete *Rangia* scatters: Locus 1 to the east and Locus 2 to the west. Locus 1 is about 24 m long, parallel to the ship channel; Locus 2 is about 45 m in length. The loci are separated by about 50 m. No cultural material was observed at Locus 1. One shard (Table 21) and a garfish scale were collected from Locus 2, above a small concentration of *Rangia* on the beach in two narrow inlets in the bankline. No midden or shellbed was visible within the actual cutbank.

Four auger tests were excavated at this locale. One was placed in Locus 1. Two were placed between Locus 1 and Locus 2, one by the bankline and the other 25 m to the northeast, by the marshland edge of the bankside. The last auger test was placed in Locus 2. The first three auger tests yielded loose silty loam or clayey silt loam with high organic content. The fourth auger test encountered loose silty soil to a depth of 75 cm, a denser clayey silt from 75 to 160 cm, and looser peaty silt below 160 cm. None of these yielded in situ cultural material or midden.

The lack of in situ shell or artifacts at 6/10/92-2 indicates that the *Rangia* and cultural material at this locale may have been redeposited, perhaps by wave action along the ship channel. The absence of oyster shell and historic or modern material at this locale suggests that the *Rangia* is derived from a nearby prehistoric site, probably within the channel, although no sites have been reported in this vicinity. In this area, the north bank of the MRGO channel has lost approximately 200 m to erosion since the 1970s. A prehistoric site may have existed between the canal bankline surveyed by Coastal Environments, Inc., in the 1970s and the present bankline. Because so few artifacts were recovered, and because they do not appear to be in primary context, the locale was not considered to represent an archeological site.

Locale 6/19/92 No. 2. The wooden remains of two buildings on the south bank of Bayou Pollett, at the bend in the channel about 600-640 m west/northwest of Martello Castle, were identified during bankline survey of the bayou. One structure is just east, the other just west of the tip of the island at a bend in the bayou channel. These constitute locale 6/19/92-2. These structures are not shown on the 1942 quadrangle of the area or on 1945 and 1951 aerial photographs. The eastern structure appears on a 1964

aerial photograph. Both buildings are shown on the 1967 edition of the Martello Castle 7.5' quadrangle. No structures are shown on Bayou Pollett by historic (nineteenth century) maps.

A scatter of modern artifacts surrounds the structural remains at 6/19/92 No. 2. No midden or cultural material was recovered in auger tests along this bayou. Rangia and oyster shell are present for over 50 m south of AT6 at this locale. This represents redeposited material migrating landward with the retreating shoreline. The southeastern shore of the "island" from AT6 to Martello Channel is now directly exposed to wave erosion from Lake Borgne, and lies landward (southwest) of the original course of Bayou Pollett. The absence of historic or prehistoric artifacts here precluded considering the locale an archeological site.

Locale 7/16/92 No. 1. The crew documented a cluster of mid-twentieth century structural remains on the east bank of Bayou Mercier about 660-740 m south of Lake Borgne, where the bayou channel turns northward just downstream from its silted-in end. A 10 m long cement slab foundation is exposed on the bankline about 40 m from the silted-in portion of the old bayou channel. The top of this slab is smooth. The slab itself is 5-10 cm thick. About 15 m farther downstream and several meters from the bayou, is a partially demolished brick structure similar to a boiler firebox. The structure is about 1.25 m wide and 2 m long; the highest remaining section of wall is 63 cm high. The interior of the structure is lined with firebrick. A large oval metal "kettle" (.75 x .5 m) lies on the ground about 1 m southwest of the "boiler" structure.

About 10-15 m farther downstream from the brick structure are a group of wood posts along the bankline. About 60 m north (downstream) from the brick structure are four large vertical wood posts and a concentration of modern house furnishings, including a toilet and drainage pipe. The cluster of structural remains was designated Locale 7/16/92 No. 1. No historic artifacts were recovered here. A 1942 edition of the 15' St. Bernard quad sheet shows two structures at this location. A 1951 aerial photograph shows the northern structure but only a clearing at the location of the southern structure. Neither building is depicted on the 1967 edition of the Martello Castle 7.5' quadrangle. The remains found during fieldwork possibly represent the mapped structures, but no material from the locale affords a pre-1942 date.

Other structural debris (wooden pilings, a modern refuse concentration) was located on the east bank about 600

n south of the lake. Modern sinks and other household hardware were observed but not collected. The 1942 map and 1951 aerial photograph do not show any structure in this location. The designation of the lower course of Bayou Mercier, from its northward bend to the lakeshore, as an "unconfirmed historic site" (Wicker et al. 1982: Figure 2-50) apparently rests on its identification as a partially wooded bankline area on a navigable bayou.

Site 16SB84, Battery Bienvenue (by Carrie Levin)

Battery Bienvenue (16SB84) is located near but not within the study area. The site will not be impacted by proposed construction because it is located outside the spoil disposal areas. During reconnaissance, the field crew briefly visited the site to take photographs and to collect sufficient data to prepare a state site file update. No testing was conducted nor were artifacts collected. Figure 51 shows two photographic views of the site.

A summary of the history of Battery Bienvenue was presented in Chapter 5. Construction of the military facility began in 1826, but it was preceded by an earthen redoubt. When the installation was abandoned in the 1870s, six cannons were left at the site.

The fort is situated on marshy ground, and as a result, the construction has suffered over time. All of the anterior walls have fallen with the exception of the northeastern wall facing Bayou Bienvenue. Small portions of the western and eastern walls are still standing at their corners with the northern wall. The interior grounds are flooded and overgrown with marsh grass and trees. Large wooden beams and planks, blocks of marble, bricks, and modern trash are strewn throughout the area.

Most of the structures shown on the 1817 and 1827 plans have fallen into rubble. The northernmost building is still standing, although it has subsided several feet. The roof is overgrown with vegetation and the interior is flooded. There is a small brick structure (2 m x .5 m, 1.25 m height) near the north center of the fort. Although the walls are intact, the roof has collapsed. The southernmost building is partially standing. It is 1.5 m in height. Its interior is overgrown and flooded.

Three other brick structures shown on the early plans have fallen into rubble. The visible remains of walls and foundations appear to have subsided. The interiors are overgrown with brush and grass and filled with water. There was no evidence of the "sink or pool" described in the



Figure 51. The upper photograph shows one of the standing walls at Battery Bienvenue (16SB84). The lower view shows the easternmost cannon at that site.



Louisiana State Site Form, although a brick and mortar rubble pile was noted in the same location.

The Site Form indicates that only two gun emplacements remain. However, a total of four emplacements with cannons were observed, as well as the ruins of two additional gun emplacements. The emplacements were constructed of marble, have diameters of approximately 5 m, and are spaced approximately 10 m apart. The cannon barrels measured 3.35 m in length and approximately 30-50 cm in diameter. They are mounted on concrete bases. Both the cannons and the concrete bases have inscriptions. Beginning with the southernmost cannon, the inscriptions are as follows:

(1) The cannon is inscribed "RPP WPF-1859" and "US." The base is not inscribed.

(2) The cannon is inscribed "WF 1839." The base is inscribed "FOS BROS 5-15-1957."

(3) The cannon is inscribed "WF 1859." The base is inscribed "3-31-1957 FOS BROS."

(4) The cannon reads "WF 1859." The base reads "4-6-1957 FOS BROS."

The remains of two additional marble emplacements were observed at 10 m intervals north of the final intact emplacements. All of the gun emplacements were overgrown with high, heavy brush and were not visible without removing the vegetation.

Site 16SB85, Tower Dupre or Martello Castle

This "site" is actually an architectural edifice, representing the remains of a military locale discussed in Chapter 5. Because the structure is privately owned, it was viewed and photographed from a small boat but was not closely examined. Figure 52 shows the front of the structure which is used as a fishing camp. It was originally taller when it was completed in 1830, but the height was reduced by one story in the 1840s. As recently as 1915, the building was situated on the shore of Lake Borgne. However, shoreline erosion has left Tower Dupre completely surrounded by water. The structure will not be impacted by proposed construction.



Figure 52. Photographic view of Martello Castle
(16SB85).

CHAPTER 13
DISCUSSION OF PREHISTORIC ARTIFACTS
BY T.R. Kidder

A total of 1415 aboriginal sherds were recovered during the course of the survey from 11 sites, including four sites where 1 x 1 m units were excavated. The overwhelming majority of the ceramics are undecorated, and largely non-diagnostic. It is possible, however, to utilize the pottery to outline a tentative culture history of the sites. This chapter discusses the ceramic analysis and suggests a chronological framework for dating the aboriginal occupation of these sites.

The ceramics from this project provide an important body of data for beginning to further understand the prehistory of the Mississippi River Delta. Although the results of the excavations were in no instance dramatic, nor are the samples especially large, this research brings us another step farther in appreciating the regional culture historical sequence.

The earliest material from the survey consisted of two sherds of Tchefuncte Plain pottery. Although these sherds are otherwise undistinguished, their presence extends the prehistory of this area back by several hundred years. The only other Tchefuncte site in St. Bernard Parish is Shell Beach (16SB44) (Wiseman et al. 1979:4/8), so we know that Tchula period Tchefuncte culture occupations presumably existed in the area. The failure to identify these sites may well stem from subsidence, since many of the known Tchefuncte sites in the Delta proper have been discovered at reasonably great depths below modern surface levels (Wiseman et al. 1979:5.8-5.9). It is disappointing to note that these two sherds were eroded and thus clearly not in primary context.

Although both early and late Marksville period occupations have been identified in the eastern Delta region, none were identified in the research reported here. Wiseman et al. (1979:5/19, Fig. 5/17) have reported a sherd of Marksville Incised, var. Yokena from 16SB39, and used this to very tentatively advance a Marksville period date for the site. This sherd is small and might be reclassified today as being more closely related to the Anglin variety of Marksville Incised. The results of the excavations at 16SB39 demonstrate that while there may be an earlier component as suggested by Wiseman et al., the earliest identified occupation noted in this research dates to the Baytown

period. Interestingly, Wiseman et al. (1979:Fig. 5.17a) illustrate a plain jar with deep interior notches from 16SB39. Although they classify it as the late Marksville plainware, Baytown Plain var. Satartia, it appears to be a form more appropriate to the early Baytown period.

When Phillips established the Whitehall phase to encompass the Baytown period in the Louisiana Delta and Coastal plain, he specifically noted that the phase "would be more accurately described...as a collection of widely dispersed sites" rather than a coherent archeological manifestation. Indeed, his distribution maps have Whitehall phase sites from north of Baton Rouge to the Barataria Basin, and from the western Chenier Plain to eastern St. Bernard Parish (Phillips 1970: Fig. 445). Subsequently Whitehall has become the broad temporal and cultural historical unit into which all "Baytown" or Troyville material has been subsumed (see Wiseman et al. 1979:4/9-4/10). Gagliano et al. (1979:4.20) have observed that the "Baytown period probably needs more work than any other period in coastal Louisiana." There has been no attempt to examine Whitehall from either a spatial or temporal perspective, although Phillips (1970:911-912) did note several possible Whitehall phase clusters (see also McIntire 1958).

The problem, of course, is that there are so few excavated contexts with which to define the Whitehall phase. It is evident, though, that the Whitehall phase is a misnomer, as acknowledged by Phillips. Excavations at 16SB39 have demonstrated that early Baytown period occupations (at least as defined on typological grounds) do exist. The presence of decorated pottery which conforms very closely with materials from well established phases in the Lower Mississippi Valley indicates that at least here we can isolate a tentative component of the early Baytown period. We are extremely hesitant to try to identify this component by name since it is isolated. Clearly further research is necessary to delineate the extent and scope of Baytown occupation in this region. Isolation of later Baytown period components will also be required, but we are confident that the ground work has already been established for this work by researchers such as Springer (1973), Giardino (n.d.), and Franks et al. (1993).

A major gap in the regional culture historical sequence is the Baytown to Coles Creek period transition. Many archeologists have "finessed" this

evolution by hyphenating "Troyville-Coles Creek," as if they were indistinguishable (Ford 1951; Neuman 1984; Springer 1973). We do not feel that such a hyphenation is necessary in the long run. Elsewhere in the Lower Mississippi Valley, late Baytown and early Coles Creek occupations can be unraveled (Phillips 1970; Williams and Brain 1983). In the Delta, we are equally confident that this will be possible, but we must admit that further excavation will be required. Research at 16SB39, however, provides a tantalizing glimpse at the possibility of separating Baytown from Coles Creek, as does work at the Pump Canal site (16SC27) (Franks et al. 1993). At these sites, we have components showing early Coles Creek-like examples of French Fork Incised, and Chevalier Stamped. Single line incised examples of Coles Creek Incised are also common, as is red filming. Rim modes are also indicative, especially the presence of early-looking rim peaks or lugs.

The Coles Creek period component at 16SB39 appears, on typological grounds, to be early. However, the Coles Creek component at 16SB40 is evidently not early, but may, in fact, be late in the Coles Creek sequence. Regrettably, while Coles Creek sequences elsewhere in the Lower Mississippi Valley and elsewhere have been temporally divided into fine-grained culture historical units, the Bayou Cutler phase of the Delta remains a poorly understood and temporally homogeneous entity (Gagliano et al. 1979; Weinstein 1987; Wiseman et al. 1979). As with the Whitehall phase, we feel that Bayou Cutler is amenable to temporal subdivision. Again, though, further research will be necessary.

There appears to be an interesting gap in the regional culture history as represented by the sites under investigation. We have no ceramic evidence for an early Mississippi period Bayou Petre phase occupation at any of the sites (the one sherd of Addis plain from Site 16SB148-5 excepted). This is unexpected in that during the Bayou Petre phase human populations expanded dramatically throughout the eastern Delta (Weinstein 1987; Wiseman et al. 1979: Figs 6/9 and 6/10). Wiseman et al. (1979: Fig. 6/10) indicate that 16SB40 and 16SB71 have occupations continuing into the Bayou Petre phase, but these are not reflected in collections examined for this research. Although the C-14 date obtained at 16SB140 in the course of this project indicates a Bayou Petre phase occupation, sherds from that site were not diagnostic. Also, based on the low density of cultural materials, the site appears to represent only a very short-term occupation by a small group of people.

The presence of several Mississippi Plain sherds indicates an occupation in the area during the late Bayou Petre phase. However, this is clearly not an intensive use of the area and appears to reflect low intensity utilization of beach or near-beach land surfaces. The distribution of late Mississippi period occupations in the St. Bernard Delta seems to reflect a pattern of land use focused on inactive levee segments and nearshore environments. No data exist that would allow for a more complete picture of Mississippian settlement, seasonality, or subsistence.

The radiocarbon date from 16SB140 is noteworthy because it was obtained from shell in direct association with ceramics that, upon initial examination, do not appear to represent the Mississippi period. A larger sample of sherds would help to resolve the apparent contradiction. A contributing problem is the dearth of excavated material from sites within the eastern Delta. As was noted earlier in this report, some sherds from 16SB140 exhibited evidence of light brushing. However, the treatment was not consistent with that associated with the Mississippi Period type Plaquemine Brushed. Again, it is possible that larger collections from a variety of sites in the eastern Delta might provide evidence on the temporal significance, if any, of this ceramic trait.

The ceramics from sites in the spoil disposal area are extremely useful for outlining and refining the regional prehistoric cultural sequence. The excavated sites have provided important glimpses into past behaviors that are tantalizing in their incompleteness. The most interesting site from the point of view of ceramics, is 16SB39, where at least two different components were exposed in excavated contexts. Typologically these occupations are intriguing because they suggest that the regional culture history is much more complex than had previously been outlined. It is suggested that the two major phases of the Late Woodland, Whitehall (Baytown period) and Bayou Cutler (Coles Creek period), can be further subdivided into at least two subdivisions each. We do not feel confident at this point in developing the phase definitions beyond the recognition of an early and late subphase for each of these two phases. Giving names to these chronological subdivisions is not warranted, for the simple reason that the data are not yet sufficient, at least in the St. Bernard Delta.

It is now fitting, we think, to refer to Whitehall I and Whitehall II, and Bayou Cutler I and Bayou Cutler II, and to differentiate the early and late subphases. Since Whitehall is conventionally dated to ca. A.D. 400-700 (Weinstein 1987: Fig. 1), it is reasonable at this time to draw the line between Whitehall I and II at ca. A.D. 550. Similarly, Bayou Cutler I and II can be divided at ca. A.D. 850, which would coincide with the chronology for the western Delta, where Bayou Cutler is succeeded by Bayou Ramos at A.D. 850 (Weinstein 1987). In the Mississippi River Delta these chronological divisions are not well supported by consistent or well-defined radiocarbon sequences. Thus these dates are at best reasonable approximations, often reinforced by extrapolation to phases elsewhere in the Lower Mississippi Valley.

The Whitehall I subphase can be expected to be marked by the presence of the so-called "terminal" Marksville ceramic tradition, characterized elsewhere by local analogs to Marksville Incised, vars. Anglin and Vick, and Marksville Stamped, var. Bayou Rouge. Also Larto Red Filmed pottery should be evident, as will late variants of Churupa Punctuated, especially something similar to var. Watson. Rim modes should include characteristic early Baytown thickened rim modes, the presence of rim and lip notching, and a relatively thick, coarse-tempered plain pottery.

Whitehall II will be more difficult to separate from early Bayou Cutler, largely because definitive criteria are harder to identify. The Marksville Incised and Stamped tradition should not be evident, but red filming might well be expected to continue. Early variants of French Fork Incised should increase in frequency, along with new types such as Evansville Punctuated and Hollyknowe Pinched. It is possible that an early form of Pontchartrain Check Stamped might be found, and rare examples of polychrome painting can also be expected. A possible characteristic of Whitehall II might be single- and possibly double-line examples of Coles Creek Incised, often with incision on thickened rims. Early Mazique Incised variants can be expected as well.

The transition from Baytown to Coles Creek is everywhere in the Lower Mississippi Valley difficult to discern and the case will be no less marked in the Delta. In Bayou Cutler I we can expect to see the continuation of French Fork Incised pottery and in fact, this should both increase in frequency and in decorative

complexity. The use of punctuated line designs (for example Evansville Punctuated, var. Rhinehart; French Fork Incised, var. Brashear; and Mazique Incised, var. Sweet Bay), should be more common. Pontchartrain Check Stamped should rise in frequency to dominate many assemblages, and certain varieties (especially Hollyknowe Pinched and Larto Red) should disappear altogether. Coles Creek and Mazique Incised should both become more common, and a greater variety of line numbers and treatments can be expected.

The transition to Bayou Cutler II will be subtle, mostly involving shifts in the frequency of existing varieties. Coles Creek Incised variants are likely to continue to expand in variety and line treatment. French Fork Incised and Mazique Incised will most likely decline in frequency, and Pontchartrain Check Stamped will most likely be the most commonly identified type.

Of course all of these ceramic changes and shifts are at best a pale reflection of more significant and culturally more relevant changes in subsistence, settlement, and social behavior. These ceramic patterns are at best hypothetical expectations based on existing data and extrapolations to other nearby ceramic sequences. The data from this survey and the excavations are not sufficient to allow for generalizations about earlier and later occupations. However, this research is, we feel, significant for demonstrating the potential of regional investigations for better defining culture history and ultimately prehistoric behavior. Sites such as 16SB39, 16SB40, and 16SB140 are significant archeological resources and have the promise of yielding important and exciting data in further years.

CHAPTER 14
RECOMMENDATIONS FOR PROTECTION OF THE SHELL BEACH BAYOU
COMPLEX OF SITES (16SB39, 16SB40, 16SB140)

Sites Recommended as "Not Significant"

It has been recommended that two sites within the probable impact area for the MRGO Dredged Material Disposal Project are not significant in terms of NRHP criteria. These are 16SB71 and 16SB148. Portions of 16SB40 are only wave-deposited beach scatters, and like these two sites, do not warrant protection or mitigation.

The Shell Beach Bayou Complex of Sites

Three sites (16SB39, 16SB40, and 16SB140) examined in the course of this study are recommended as eligible for inclusion in the National Register of Historic Places. Together, they have been termed the "Shell Beach Bayou Complex" because of their close proximity. All exhibit the quality of integrity as defined by the National Park Service (1982) and all exhibit further research potential (Criterion D) as defined by that agency. The potential of each site individually is enhanced by the close proximity of two other sites representing different time periods. Because of their proximity and interrelated research potential, it was recommended in Chapter 11 that they be treated as an archeological district. Measures to prevent adverse effect to these sites are discussed in this chapter.

Sites 16SB39 and 16SB40

Preservation of archeological sites is preferable to mitigation of those sites through excavation. Although archeological sites are numerous in St. Bernard Parish and southeastern Louisiana generally, they are rapidly subsiding and eroding. Sites in this area must, therefore, be considered a disappearing, non-renewable resource.

The proposed construction project may actually offer an opportunity to protect 16SB39 and 16SB40 if the project includes erecting a barrier to lakeshore erosion. As has been noted several times in this report, the rate of erosion on the south shore of Lake Borgne is dramatic. Several hundred meters have been lost in the twentieth century. This includes most of 16SB40; only a small area of in situ midden still lies buried beneath the beach ridges. This will be gone in

only a few years, and at the present rate, Middens C, D, and E of 16SB39 will be at water's edge within a matter of decades or less.

If appropriate precautions are taken, it is possible that the proposed dredge disposal project may help to preserve these two sites. A "Site Avoidance Plan" has been drafted by the New Orleans District and forwarded to the Louisiana Historic Preservation Officer. It is partially based on initial recommendations made in a Management Summary forwarded to the NODCOE at the end of fieldwork. Included within the Management Summary were caveats regarding some possible approaches to protection. The recommendations and the drawbacks were discussed at a meeting attended by the principal authors of this report (Jones and Franks) and by Mr. Michael Stout, Mr. Del Britsch (geologist), and several engineers affiliated with the NODCOE. It was in the course of that meeting that measures outlined in the present Site Avoidance Plan were agreed upon.

Prior to construction and spoil disposal, a detailed topographic map of 16SB39 and 16SB40 will be prepared. This will serve two purposes. First, it will provide a baseline for comparisons of pre- and post-disposal condition of the site. Second, it will insure that information concerning the topographic relationships between the six middens at 16SB39 and their relationship to the partially infilled channel of Shell Beach Bayou are recorded prior to dredge disposal onto the sites. During this period, the "Proposed Site Protection Boundary" shown in Figure 21 will be flagged. This area is one in which all construction-related excavation will be prohibited.

As part of the project plans, a low earthen dike will be constructed along the beach ridge of the south shore of Lake Borgne. It is hoped that this, in combination with the dredge spoil that will be deposited atop 16SB39 and 16SB40, will at least slow the present rate of erosion. If so, and if the "no excavation" policy within the site protection boundary is strictly enforced and monitored, then the dredge disposal project may be beneficial rather than detrimental to the significant archeological deposits.

On the west side of the site protection area, a low earthen dike will be constructed to reduce the velocity of sediment-laden water flowing into the area. Dredge discharge from the south has a greater distance to

travel so that the potential for scour of 16SB39 is probably minimal. One other measure will be taken to reduce the possibility of scouring the sites. A "baffle" will be placed on the end of the discharge pipe to disperse the energy of the discharge water. The engineers in attendance at the above-mentioned meeting indicated that these measures would prevent scouring and erosion of 16SB39 and 16SB40.

Following dredge disposal and a period of six to twelve months during which the material will dry and settle, a second topographic map will be prepared to assess the amount of material deposited atop the site. At that time, the locations of all earthen dikes and the presence, if any, of scour areas will be recorded.

The "Site Avoidance Plan" includes collection of deposited material to determine its physical and chemical composition. It is recommended here that comparable data be collected prior to dredge material disposal so that baseline data will be available to assess subsurface chemical changes that might affect floral or faunal preservation.

The alternative to site protection measures is mitigation of these two sites. Extensive excavation and analysis would be necessary. Excavations should include the use of water-screening and nested 1/4- and 1/8-inch mesh, as well as flotation of numerous soil samples. At minimum, the equivalent of a 2 x 2 m unit should be excavated within Middens A, B, and F of 16SB39. If features such as habitation floors are encountered, the area of excavation should be expanded.

A series of trenches should be also be excavated through Middens C, D, and E of 16SB39. These trenches should be oriented perpendicular to the long axis of each midden. At least two such trenches should be excavated through each midden. The purpose of these trenches is to determine whether any evidence for stages of "construction" are apparent. Two different strata were observed in EU2 and this is evidence for some differentiation within Midden E. Each of the trenches should be at least two meters wide to allow excavation to continue down to the base of the underlying midden. A series of 2 x 2 m or larger units should then be excavated on some of the smaller, elevated features adjacent to Midden C, D, and E. EU1 indicated that some of these features contain burials. EU3, by yielding a "pottery-smoothing stone" and pottery coils, indicated

that other such features may represent activity areas related to habitation and subsistence.

It is recommended that if mitigation of 16SB40 becomes necessary, the equivalent of three 2 x 2 m units be excavated. If features were recorded, particularly features such as floors or hearths, then additional units should be placed on the site. All fill should be water-screened through 1/4-inch and 1/8-inch nested screens. Soil for flotation should also be collected and processed because the potential for floral preservation is excellent.

Site 16SB140

A separate assessment of project impacts is necessary for 16SB140. At present, this site is being eroded by wave-wash related to the passage of large ships in the MRGO channel. When ships initially pass, large volumes of water are pulled out of Shell Beach Bayou and into the MRGO. Thereafter, a wave of water comes rapidly into the bayou. This cycle is repeated for a long period of time, although each successive episode involves a lesser amount of water. These waves of water are slowly destroying the site. It should be noted that destruction has been gradual, probably because the natural levee soil at the site has a very high clay content and is therefore resistant to erosion.

No dikes, walls, or barriers are planned which would be located close to this site and might, therefore, result in impact. Rather, the site lies in the interior of an area within which spoil will be deposited. One result of the spoil will be infilling of the southern end of Shell Beach Bayou. This will prevent further erosion of the site. If protective action such as this is not taken, then mitigative measures should be undertaken because maintenance of the MRGO as a channel for large ships is resulting in site destruction.

With only two possible exceptions, it would appear that the site will not be adversely impacted by accumulation of spoil atop it. One of these possible impacts would be to "lose" the site. As part of this project, a permanent datum has been established (and at 16SB39 and 16SB40 as well). It is recommended that this datum be relocated after each episode of dredge material disposal.

The other possible impact is chemical changes in the soil that might affect floral or faunal preservation. As was recommended for 16SB39 and 16SB40 pre- and post- disposal samples should be obtained and analyzed to determine if such changes are taking place.

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